BRIGHAM YOUNG UNIVERSITY

General Catalog of Courses

1978 - 1979

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BRIGHAM YOUNG UNIVERSITY BULLETIN

GENERAL CATALOG
1978-79

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Academic Calendar

Brigham Young University's year-round modular calendar consists of three 16-week semesters, with the third semester divided in half so that students can take either or both halves, or terms. Expressed in months of study, the calendar can be abbreviated 4-4-2-2. The regular University curriculum continues through the Spring and Summer Terms. Block scheduling makes it possible for complete courses to be finished in each of the two-month terms.

Semesters are interchangeable. Students may complete their college study by attending any two semesters during the year and may work the other semester—not necessarily during the summer. This is advantageous where employment is more easily obtained during the autumn or winter.

Students wishing to do so may graduate in three years by attending an extra half semester per year (4-4-2) such as the period from September through June—totaling seven and one-half semesters in three years. The extra half semester of credit can be completed with CLEP examinations, with college equivalency credit from high school, by registering for an extra hour in each of the seven and one-half semesters, by registering for an extra term (such as the Summer Term), or by taking an extension or home-study course during one of the three years.

For students on the conventional two-semester program, the early closing of the Winter Semester (in the third week of April) provides additional working time and a first chance at summer jobs.

1978	**Calendar for Fall Semester**
Feb. 15 W	Last day freshman students may submit applications for Spencer W. Kimball scholarships or talent awards for Fall Semester Final date for new transfer students and former BYU students to submit admission applications for Fall Semester
Mar. 1 W	Last day continuing students may submit applications for scholarships for Fall Semester
Apr. 28 F	Final date for international students to submit admission applications for Graduate School
Apr. 30 S	Final date for new freshmen to submit admission and scholarship applications for Fall Semester.
June 15 TH	Final date for graduate students to submit admission applications for Fall Semester
July 1 SA	Last day transfer and former BYU students may submit applications for scholarships for Fall Semester Final date for new transfer students and former BYU students to submit admission applications for Fall Semester
July 5 W	Last day students may submit advance registration forms for first-priority scheduling
July 21 F	Last day students may submit advance registration forms for second-priority scheduling
Aug. 9 W	Deadline for submitting advance registration forms for Fall Semester registration
Aug. 11 F	Last day students may arrange for tuition loans from Financial Aids Office for Fall Semester to pay by August 25
Aug. 25 F	Tuition mail-in deadline for Fall Semester
Aug. 29-31 T-TH	Annual Fall Workshop
Aug. 31; Sept. 1,2 TH-SA	New student orientation
Sept. 4 M	Labor Day holiday
Sept. 5 T	First day of classes Late registration for students who did not use advance registration system First day change in registration permitted
Sept. 12 T	First day fee is assessed for dropping classes
Sept. 18 M	Last day for late registration and adding classes
Sept. 21 TH	Last day to drop first block classes for academic reasons
Sept. 22 F	Final date for undergraduates to apply for December graduation
Sept. 30 SA	Final date for students to submit admission applications for second block of Fall Semester
Oct. 10 T	Last day to drop continuous classes for academic reasons Last day a student can officially withdraw from the University without failing grades
Oct. 20 F	Midsemester (second block) registration
Oct. 23 M	Classes begin for second block
Oct. 27 F	Last day to drop second block classes
Nov. 23, 24 TH, F	Thanksgiving holiday
Nov. 27 M	Last day on which a student may officially withdraw or drop classes for nonacademic emergencies
Dec. 13 W	Last day of class instruction
Dec. 14 TH	Dead day
Dec. 15, 16,18,19 F, SA, M, T	Final exams
Dec. 20 W	December graduation (no commencement exercises)

1978-79	**Calendar for Winter Semester**
Aug. 31 TH	Final date for international students to submit admission applications for Graduate School
Oct. 15 S	Final date for transfer students and former BYU students to submit applications for Graduate School
Nov. 1 W	Last day new students may submit applications for scholarships for Winter Semester
Nov 3 F	Last day students may submit advance registration forms for first-priority scheduling
Nov. 22 W	Last day students may submit advance registration forms for second-priority scheduling
Dec. 6 W	Deadline for submitting advance registration forms for Winter Semester registration
Dec. 7 TH	Last day students may arrange for tuition loans from Financial Aids Office for Winter Semester to pay by December 21

Dec. 21 TH	Tuition mail-in deadline for Winter Semester
Jan. 3 W	New student orientation
Jan. 4 TH	First day of classes Registration for all students who did not use advance registration system First day change in registration permitted
Jan. 12 F	First day fee is assessed for dropping classes Final date for undergraduates to apply for April graduation
Jan. 17 W	Last day for late registration and adding classes
Jan. 22 M	Last day to drop first block classes for academic reasons
Jan. 30 T	Final date for students to submit applications for second block of Winter Semester
Feb. 7 W	Last day to drop continuous classes for academic reasons Last day a student can officially withdraw from the University without failing grades
Feb. 19 M	Spring break—Presidents' Day holiday
Feb. 23 F	Midsemester (second block) registration
Feb. 26 M	Classes begin for second block
March 1 TH	Last day to drop second block classes
March 30 F	Last day on which a student may officially withdraw or drop classes for nonacademic emergencies
April 12 TH	Last day of class instruction
April 13 F	Dead day
April 14, 16-18 SA, M, T, W	Final exams
April 20 F	Commencement

1979 Calendar for Spring Term

Dec. 31 S	Final date for international students to submit admission applications for Graduate School
Jan. 31 W	Last day continuing students may submit scholarship applications for early awarding of Spring Term scholarships
Feb. 20 T	Final date for graduate students to submit admission application for Spring Term
March 1 TH	Last day all applicants may submit application for scholarships for Spring Term Final date for new freshmen, new transfer students, and former BYU students to submit admissions applications for Spring Term
March 16 F	Last day students may submit advance registration forms for first-priority scheduling for Spring Term
April 6 F	Deadline for submitting advance registration forms for Spring Term registration Last day students may arrange for tuition loans from Financial Aids Office for Spring Term to pay by April 20
April 20 F	Tuition mail-in deadline for Spring Term
April 28 SA	New student orientation
April 30 M	First day of classes Registration for all students who did not use the advance registration system First day change in registration permitted
May 3 TH	Fee in effect for dropping classes
May 7 M	Last day for late registration and adding classes
May 14 M	Last day to drop continuous classes for academic reasons Last day a student can officially withdraw from the University without failing grades
May 18 F	Final date for undergraduates to apply for August graduation
May 28 M	Memorial Day holiday
June 7 TH	Last day on which a student may officially withdraw or drop classes for nonacademic emergencies
June 21 TH	Last day of class instruction

1979 Calendar for Summer Term

Jan. 31 W	Last day continuing students may submit scholarship applications for early awarding of Summer Term scholarships
Feb. 28 W	Final date for international students to submit admission applications for Graduate School
April 15 S	Final date for graduate students to submit admission applications for Summer Term
April 30 M	Last day all applicants may submit scholarship applications for Summer Term scholarships Final date for new freshmen, new transfer students, and former BYU students to submit admissions applications for Summer Term
May 11 F	Last day students may submit advance registration forms for first-priority scheduling for Summer Term
June 1 F	Deadline for submitting advance registration forms for Summer Term registration Last day students may arrange for tuition loans from Financial Aids Office for Summer Term, to pay by June 15
June 15 F	Tuition mail-in deadline for Summer Term
June 25 M	New student orientation
June 26 T	First day of classes Registration for all students who did not use the advance registration system First day change in registration permitted
June 29 F	First day fee is assessed for dropping classes
July 4 W	Fourth of July holiday
July 5 TH	Last day for late registration and adding classes
July 11 W	Last day to drop continuous classes for academic reasons
July 24 T	Pioneer Day holiday
Aug. 3 F	Last day on which a student may officially withdraw or drop classes for nonacademic emergencies
Aug. 16 TH	Last day of class instruction
Aug. 17 F	Commencement

General Information

Introduction

Brigham Young University Today

Brigham Young University is a coeducational institution of higher learning established to promote a closer union between the restored gospel and all branches of learning. In addition to high standards of scholarship, the University has always fostered the development of religious faith, high moral character, and responsible citizenship. Sponsored by The Church of Jesus Christ of Latter-day Saints (Mormon), it offers the student a unique blend of spiritual and secular learning.

Situated just forty-five miles south of historic Salt Lake City is beautiful Utah Valley. The 536-acre Provo campus is posed against the magnificent backdrop of the Wasatch Mountains. With 25,000 students from all fifty states and from sixty-nine foreign countries, Brigham Young University is the nation's largest church-related university. Its more than 1,100 full-time faculty members hold degrees from universities throughout the United States and several foreign countries. Sixty-six percent hold doctoral degrees. Instruction is offered in 150 subject areas by the University's sixteen colleges and graduate schools.

The Hawaii Campus at Oahu became a part of Brigham Young University in September 1974 by action of the Board of Trustees. An academic dean was designated to report directly to the President of Brigham Young University. Admission to the Hawaii Campus is by separate application, and curriculum, calendar, fees, faculty, and student records are separate from the main Provo campus. Course offerings and other information on the Hawaii campus are contained in a general catalog obtainable for $1.50 by writing to the Admissions Office, BYU—Hawaii, Laie, Oahu, Hawaii 96762.

Brigham Young University does not discriminate on the basis of race, color, creed, sex, or ethnic or national origin. Qualified handicapped students are also admitted. All students are accepted for admission to Brigham Young University provided they meet the University's academic requirements and their personal behavior conforms to the standards of The Church of Jesus Christ of Latter-day Saints. High standards of honor, integrity, and morality; graciousness in personal behavior; application of Christian ideals in everyday living; and abstinence from tobacco, alcohol, and harmful drugs are required of every student.

At Brigham Young University, the quest for both knowledge and wisdom is symbolized in the school motto: "The glory of God is intelligence."

Brigham Young University Goals

"Education is the power to think clearly, the power to act well in the world's work, and the power to appreciate life."
—Brigham Young

"Because of its unique combination of revealed and secular learning," the First Presidency of The Church of Jesus Christ of Latter-day Saints has declared, "Brigham Young University is destined to become a leader among the great universities of the world."

These seven goals point the way for the University's efforts to fulfill that destiny:

1. **Religion.** Provide religious instruction and experience that will—
   a. strengthen faith in God the Father and his Son Jesus Christ,
   b. increase knowledge and testimony of the restored gospel,
   c. magnify ability and desire to use the principles of the gospel in solving personal and public problems, and
   d. develop leadership for serving family, church, and community.
2. **General Education and Personal Development.** Provide a curriculum and other resources that will help each student achieve—
   a. the ability to think clearly, learn independently, and communicate effectively,
   b. the perspective necessary for informed behavior and meaningful contribution to society,
   c. the appreciation of beauty, and
   d. the balanced personal growth necessary for maximum individual performance.
3. **Major Areas of Study.** Foster areas of study that will provide—
   a. specific prerequisites and appropriate general background for students who intend to pursue graduate training (pregraduate study) or
   b. specialized training for a limited number of students in preparation for vocations where qualifications are well defined (specialized major) or
   c. an education that is sufficiently general and flexible to prepare students for valuable service and personal fulfillment in a wide variety of activities (other majors and general preparation).
4. **Creative Work.** Promote research, writing, and other creative work by University personnel and students to increase knowledge, advance education, and foster the creative arts.
5. **Maximum Use of Resources.** Make maximum use of University resources by means such as—
   a. academic procedures that facilitate the waiver of requirements or the granting of credit for college level achievements,
   b. admissions policies that foster optimum use of physical and human resources, and
   c. calendars, class schedules, course regulations, graduation requirements, and teaching techniques that will promote efficiency in learning

6. **The Standard of Excellence.** Encourage all members of the University community to pursue excellence as the standard of performance in all activities. This would include the following:
   a. Fostering precise and mature scholarship by faculty and students.
   b. Supporting appropriate opportunities and incentives to enhance the quality of teaching and administration.
   c. Dignifying the work of all members of the University community.
7. **Building Up the Kingdom of God.** Increase the willingness and ability of University personnel and students to apply their personal knowledge, talents, and other resources to building up the Kingdom of God.

The History of Brigham Young University

On October 16, 1875, Brigham Young deeded 2.1 acres of land at Third West and Center Street in Provo, Utah, to Abraham O. Smoot and six other Trustees for the establishment of Brigham Young Academy. President Young specified in his Deed of Trust that "all pupils shall be instructed in reading, penmanship, orthography, grammar, geography, and mathematics, together with other branches as are usually taught in an academy of learning; and the Old and New Testaments, the Book of Mormon, and the Book of Doctrine and Covenants shall be read and their doctrines inculcated in the Academy." As the institution has grown during the past one hundred years from an obscure elementary school with twenty-nine students to a prominent American university with a full-time student body of over 25,000, Trustees, administrators, teachers, and students have worked together to keep Brigham Young's trust by making the school which bears his name an academic center in a distinctly spiritual setting.

Principal Warren N. Dusenberry inaugurated the first experimental term of Brigham Young Academy on January 3, 1876. Because of his duties as probate judge, attorney, and Provo businessman, Dusenberry remained at the helm of the school for only four months. In April President Brigham Young called Karl G. Maeser, a talented German schoolmaster, into his office and asked him to become the principal of Brigham Young Academy. Maeser accepted the calling, along with Brigham Young's charge to teach even the multiplication tables with the Spirit of God. With the help of Abraham O. Smoot (mayor of Provo, president of Utah Stake, and president of the Brigham Young Academy Board of Trustees) and other local leaders, the school grew steadily. Despite financial difficulties, Principal Maeser recruited a competent faculty, and Brigham Young Academy was soon known as the foremost teacher training institution in the territory.

On January 4, 1892, the Academy Building was dedicated, and Principal Maeser retired from his position at the Academy to devote full time to his calling as superintendent of LDS Church schools. His replacement, Benjamin Cluff, Jr., was a graduate of the Academy who later obtained his bachelor's degree from the University of Michigan. Principal Cluff energetically dedicated himself to the challenge of expanding the work of the school. In 1896 the LDS Church assumed the school's debts and incorporated the Academy as a subsidiary of the Church. The Collegiate Department was organized on Founders' Day in 1896. Symbolic of Cluff's achievement, the name of the school was changed from Brigham Young Academy to Brigham Young University on October 23, 1903.

Later in 1903 Benjamin Cluff, Jr., resigned his position as president of Brigham Young University to pursue business opportunities in Central America. In April 1904 George H. Brimhall became the fourth president of the school. Himself trained as a teacher at Brigham Young Academy, Brimhall worked to increase BYU's preeminence as a teacher training institution, at the same time upgrading the overall collegiate program of the University. In 1906 the Bachelor of Arts degree replaced the Bachelor of Pedagogy degree, and in 1916 the Board of Trustees authorized the establishment of a Master of Arts program. In 1909 BYU was designated the Church Teachers College, and President Joseph F. Smith presided at the laying of the cornerstone for the Maeser Memorial, the first University building on Temple Hill (upper campus).

George H. Brimhall retired from the presidency of Brigham Young University in 1921, and Franklin S. Harris took his place. An internationally recognized agronomist, Dr. Harris worked vigorously to transform BYU into a real university. The Graduate Division was organized in 1922. In 1928 the University successfully completed its struggle for accreditation when it was recognized by the Association of American Universities. While most American universities suffered from declining enrollment during the depression, BYU enjoyed a steady increase in student enrollment and academic prominence. In 1939, the same year General Authorities of the LDS Church replaced local residents as members of the BYU Board of Trustees, the school had a collegiate enrollment of 2,375 students and awarded 361 bachelor's degrees, along with 28 master's degrees. World War II depleted student enrollment to a low of 884 in 1943, when women students outnumbered men by more than six to one.

In 1945 Franklin S. Harris resigned as president of Brigham Young University to accept the position of president of Utah State Agricultural College in Logan. Howard S. McDonald, superintendent of Salt Lake City public schools, was appointed to take his place. President McDonald faced the challenge of administering a school whose enrollment increased as rapidly after World War II as it had decreased during the war. In 1946 there were 4,366 students on campus, many of them veterans. McDonald responded to the challenge of skyrocketing enrollment by increasing student housing, planning for the expansion of academic facilities, and creating new services for students.

Howard S. McDonald resigned from his position at BYU in 1949 to become president of Los Angeles City College. For two years Dr. Christen Jensen, who had served since 1929 as dean of the Graduate School, was acting president of Brigham Young University. In 1951 Ernest L. Wilkinson, a prominent graduate of BYU who was practicing law in Washington, D.C., became seventh president of the University. He immediately launched the largest program for recruiting students and increasing physical facilities in the history of the school. He received authorization to establish the University's first doctoral program in 1957. Church programs kept pace with the growing student body, and the first campus stake of the LDS Church was organized at the school in 1956. In 1965 the University established its program of awarding two-year associate degrees for training in technical areas.

When Ernest L. Wilkinson resigned as president of Brigham Young University in 1971, the Board of Trustees announced plans to establish the J. Reuben Clark School of Law at BYU. Dallin H. Oaks, a graduate of BYU during the Wilkinson years and a professor of law at the University of Chicago, became the eighth president of BYU in August 1971. Working with a student enrollment limited to 25,000, President Oaks has concentrated his efforts on increasing the academic maturity of Brigham Young University. In 1974 the Church College of Hawaii became a branch of BYU.

Brigham Young University has experienced phenomenal growth during its first century of operation, and yet, Brigham Young University today has much in common with yesterday's Brigham Young Academy. The spirit of vision and dedication that characterized Brigham Young, Abraham O. Smoot, and Karl G. Maeser lives in the administrators, faculty, and students of Brigham Young University, who are working to fulfill President John Taylor's prophecy that "Zion will be as far ahead of the world in everything pertaining to learning of every kind as we are today in regard to religious matters."

Accreditation and Affiliations

BYU offers a full university curriculum, and its credits are recognized and accepted to the same extent as those of other leading American universities. The University is fully accredited by the following organizations:

American Assembly of Collegiate Schools of Business
American Association of Marriage and Family Counselors
American Library Association
American Psychological Association
American Speech and Hearing Association
Council of Associate Degree Programs of the National League for Nursing
Council of Baccalaureate and Higher Degree Programs of the National League for Nursing
Council of Social Work Education
Engineers' Council for Professional Development for the four-year programs leading to Bachelor of Science degrees in chemical engineering, civil engineering, electrical engineering, and mechanical engineering; the five-year programs leading to Master of Engineering degrees in civil engineering, electrical engineering and mechanical engineering; the four-year programs leading to Bachelor of Science degrees in design and graphics technology, electronics technology, and manufacturing technology; and the two-year program in electronics engineering technology.
International Association of Counseling Services
National Accrediting Agency for Clinical Laboratory Sciences
National Association of Schools of Music
National Council for Accreditation of Teacher Education for preparing elementary teachers, secondary teachers, school service personnel, and for conferring the master's degree.
Northwest Association of Secondary and Higher Schools
Utah State Board of Nursing
Utah State Department of Education
Utah State Department of Public Instruction in cooperation with the United States Office of Education for the training of vocational home economics teachers.
American Bar Association. The J. Reuben Clark School of Law received provisional accreditation from the ABA in February 1977.

In addition, Brigham Young University is affiliated with the following educational associations:

Administrative Management Society
Adult Education Association of the United States of America
American Academy of Management
American Accounting Association
American Advertising Association
American Association for Humanistic Psychology
American Association for the Advancement of Slavic Studies
American Association of Colleges for Teacher Education
American Association of Colleges of Nursing
American Association of Collegiate Registrars and Admissions Officers
American Association of Real Estate Appraisers
American Association of University Women
American Chemical Society
American College Public Relations Association
American Council on Education
American Dietetics Association
American Economics Association
American Film Institute
American Finance Association
American Historical Association
American Home Economics Association
American Institute of CPAs
American Management Association
American Marketing Association
American Psychological Association
American Society for Engineering Education
American Society for Public Administration
American Society of Journalism School Administrators
American Society of Public Accountants
American Sociological Association
American Statistical Association
American Theatre Association
Association for Asian Studies
Association for Comparative Studies
Association of American Colleges
Association of American Library Schools
Association of American University Presses
Association of Continuing Higher Education
Association of Departments of Foreign Languages
Association of Research Libraries
Bibliographic Center for Research, Rocky Mountain Region
Changes in Liberal Education
College and University Personnel Association
College Entrance Examination Board
College Placement Council
Consumer Research Association
Council for European Studies
Council for the Advancement and Support of Education
Council of Graduate Schools in the United States
Econometric Society
Economic and Business History Society
Economic History Association
Educational Films Library Association
Federation of Schools of Accountancy
Financial Management Association
History of Economics Society
Industrial Relations Research Association
Institute for Applied Behavioral Science
Institute of Management Science
International Association of Applied Social Scientists
International Association of Scholarly Publishers
International City Management Association
International Personnel Management Associations
Marketing Science Institute
National Association of Accountants
National Association of Business Teacher Education
National Association of Independent Colleges and Universities
National Association of Public Affairs and Administration
National Association of Purchasing Management
National Association of Student Personnel Administrators
National Business Educators Association
National College Honors Council
National Commission of Accrediting
National Council on Family Relations
National Financial Association
National League for Nursing
National University Extension Association
Operation Research Society of America
Organization of American Historians
Society for International Development
Speech Communication Association
Western Association for German Studies
Western Association of Graduate Schools
Western College Association
Western Council for Higher Education in Nursing
Western Governmental Research Association
Western History Association
Western Interstate Commission on Higher Education

The BYU Code of Honor

The Church of Jesus Christ of Latter-day Saints sponsors Brigham Young University in order to provide a university education in an atmosphere consistent with the ideals and principles of the Church. The maintenance of high standards of personal behavior and appearance is essential to the preservation of that atmosphere and to the development of men and women who personify these ideals and principles. By enrolling or accepting employment at Brigham Young University a person signifies willingness to live in accordance with the following principles, whether on or off campus:

1. Abide by the standards of Christian living taught by The Church of Jesus Christ of Latter-day Saints. This includes graciousness and consideration for others and the observance of high principles of honor, integrity, and morality.
2. Be honest in all behavior.
   This includes not cheating, plagiarizing, or knowingly giving false information.
3. Respect personal rights.
   This includes—

   a. not physically or verbally abusing any person and not engaging in conduct that threatens or endangers the health or safety of others, and
   b. not obstructing or disrupting the study of others; the performance of official duties by University officers or employees; the teaching, research, disciplinary, administrative, or other functions of the University; or other authorized activities on University premises.
4. Respect property rights
   This includes refraining from theft, concealment, damage, or misuse of the property of others.
5. Obey, honor, and sustain the law
6. Avoid drug abuse
   This includes refraining from the possession, use, or distribution of any narcotic or dangerous drug (as defined by applicable law), except as prescribed by a licensed medical practitioner.
7. Comply with all University regulations
   This includes compliance with rules relating to campus organizations and to the use of University or off-campus housing or other facilities.
8. Observe the Word of Wisdom
   This includes abstinence from alcoholic beverages, tobacco, tea, and coffee.
9. Live the law of chastity
   This includes abstinence from all sexual relations outside the bonds of marriage.
10. Observe high standards of taste and decency
    This includes refraining from disorderly, lewd, indecent, or obscene conduct or expression.
11. Observe University standards of dress and grooming
12. Help others fulfill their responsibilities under this Code

Dress and Grooming Standards

Students at Brigham Young University, BYU—Hawaii Campus, Ricks College, and LDS Business College are expected to support and abide by the following standards of dress and appearance. Continuing registration constitutes an affirmative consent to abide thereby.

General

The attire and grooming of both men and women should always be neat and clean. Shoes are to be worn in public campus areas. Shorts are acceptable wear only in the living and athletic areas. So-called "grubby attire" may be worn only in the immediate living areas of residence halls and at informal outdoor activities, but not in dining areas. Acceptable attire will be designated for each student body function.

Men

Slacks, polished cottons, or jeans with sweaters, sport shirts, ties, sport coats, and blazers are all acceptable menswear for attendance at classes. Beards are not acceptable. Mustaches are not encouraged, but if worn should be trimmed above the corners of the mouth. Long or bushy sideburns are not acceptable. Hair must be styled so that it does not cover the ears, and it must be above the collar in the back.

Women

Dresses and sweaters or blouses with skirts, culottes, slacks, or modest pantsuits, not to include jeans, are all acceptable women's wear for attendance at classes. Women's hemlines (dresses, skirts, culottes) are to be of modest length. Formal wear may be either a long or short formal. It does not include low-cut necklines or strapless gowns.

Confidentiality of Records Policy

The policy of Brigham Young University concerning confidentiality of student academic records reflects a reasonable balance between the obligation of the institution for the instruction and welfare of the student and its responsibility to society. The University will make every effort to maintain student academic records in confidence by keeping information from individuals who are not authorized to receive it or who might use it for illegitimate purposes.

While the Family Educational Rights and Privacy Act of 1974 which controls access to the student records of most universities does not apply to Brigham Young University, the University will make every effort to extend to students and their families the same rights granted by the act. Upon presentation of appropriate identification and under circumstances which preclude alteration or mutilation of records, a student will be able to inspect all records which are not considered by the University to be held under a pledge of confidentiality or considered to be private records of University personnel. A student is entitled to an explanation of any recorded data and may initiate action leading to a hearing, if necessary, to correct or expunge information he or she considers inaccurate or misleading.

Faculty and administrative officers who have a legitimate need to use student records will be allowed access to such records as needed without prior permission from the student. A request from an educational institution to which the student has applied for admission or from a lending institution from which the student is seeking assistance will be granted without the student's permission. Similarly, statistical data will be furnished to university accrediting bodies and governmental officials without permission of the student.

No student information other than public information will be given to any third party except those mentioned above without written consent of the student, and then only those records accessible to the student. The term **third party** is construed to include parents, spouse, employers, government agencies, or any other people or organizations. Parents or guardians may have access to grade reports and other reports of a student's activity if the parents establish to the satisfaction of the University that they are providing one-half or more of the student's support. Court orders and subpoenas for records will be referred to the University's legal counsel and acted upon according to his directions. The student will be notified of information to be submitted in response to subpoenas or court orders prior to actual submission of the material.

Public information will be released to news media and to others upon request. Public information is defined as follows:

1. Name of student
2. Whether student is currently enrolled
3. Class (i.e., freshman, sophomore, etc.)
4. Home and local addresses and telephone numbers
5. Field of study
6. Degrees awarded, if any
7. Birth date
8. Names of parents or spouse

Such information will be released only with appropriate precautions for the safety and privacy of the student. Under proper conditions, the registrar or assistant registrar may give the addresses of parents.

Academic Program

Admission to Undergraduate Study

Brigham Young University does not discriminate on the basis of race, color, creed, sex, or ethnic or national origin. All students are accepted for admission to Brigham Young University provided they maintain ideals and standards in harmony with those of The Church of Jesus Christ of Latter-day Saints and meet the University's academic requirements. High standards of honor, integrity, and morality; graciousness in personal behavior; application of Christian ideals in everyday living; and abstinence from tobacco, alcohol, and harmful drugs are required of every student.

Admission to BYU as an undergraduate is based upon consideration of an official application and results of the American College Test. Application may be obtained from high school or junior college counselors, stake admissions advisers, or by writing to the Admissions Office, A-153 ASB

American College Test

The American College Test is given nationally five times each year, and students are asked to complete the test during the last semester of their junior year in high school. All high school applicants and transfer students having fewer than 24 semester hours (32 quarter hours) of credit must submit ACT scores. The test must be completed early enough for the results to be in the Admissions Office prior to the deadline date for the semester in which the student intends to enroll. Test results arrive at the University approximately four weeks after the test is given, and tests are administered in October, November, February, April, and June.

Students must register for these tests at least one month in advance of the test date. Registration materials may be obtained from most high school or college counseling offices or by writing to American College Testing Program, P.O. Box 168, Iowa City, Iowa 52240.

Admission Application Deadlines

Students wishing to be considered must submit all materials to the University on or before the deadline date for the semester in which they intend to register. These dates are as follows:

Fall Semester 1978	
New freshmen	April 30, 1978
Transfer, former*, and nondegree-seeking graduate students	July 1, 1978
Fall Second Block 1978—October Entry	
All applicants	October 7, 1978
Winter Semester 1979	
All applicants	November 1, 1978
Winter Second Block 1979—March Entry	
All applicants	January 31, 1979
Spring Term 1979	
All applicants	March 1, 1979
Summer Term 1979	
All applicants	May 1, 1979

*Former BYU day students who interrupt continuous enrollment by not attending a Fall Semester must reapply for admission. Former day students not enrolled Winter Semester must also reapply. Registration materials will not be processed for students not properly readmitted.

Admissions Evaluation Fee. A $15.00 nonrefundable admissions evaluation fee must accompany all applications for admission. Checks or money orders are requested and should be made payable to Brigham Young University.

Social Security Number. Each student entering the University must have a social security number for identification on student records. These may be obtained from the nearest social security office or local post office. International students will be assigned an appropriate identification number by the Admissions Office.

New Freshman Applicants

Primary factors considered in granting admission to BYU are the results of the American College Test (ACT), the student's grade-point average, and the confidential interview by the student's bishop or clergyman. Other pertinent information, such as career choice, application entry date, and geographic location, will be reviewed by the University Admissions Committee.

To be considered for admission, a student must submit the following required materials by the appropriate deadline dates listed above:

1. The completed application form (Parts A and B)
2. Results of the American College Test
3. Official transcripts of all academic work completed, including high school and post-high-school work
4. A $15.00 nonrefundable admissions evaluation fee
5. The student's commitment and confidential report completed by the student and his or her bishop or other appropriately designated church or school official

Students nineteen years of age and older who have not completed high school may be considered for admission by submitting the results of the high school level General Educational Development Test in addition to the required materials listed above.

Early Admission. High school students who wish to be considered for admission to Brigham Young University prior to high school graduation must—

1. have cumulative high school grade-point averages of 3.40 (B+) or higher on all work to date,
2. achieve composite standard ACT scores of 24 or higher,
3. submit unconditional letters from parents or guardians recommending enrollment in a college program prior to high school graduation,
4. submit unconditional letters from high school counselors or principals recommending enrollment in a college program prior to high school graduation, and
5. complete all other requirements as defined under New Freshman Applicants.

All requests for early admission are subject to individual consideration by the Admissions Committee, and the final decision rests with that committee.

Advanced Placement (AP). Students who complete the advanced placement examinations offered to high school seniors and score a composite grade of 5, 4, or 3 in any subject may be granted up to 8 semester hours of college credit in that subject.

College Level Examination Program (CLEP). Brigham Young University will grant 3 semester hours in each subarea of the general examination in which the student scores 560 or higher. Brigham Young University will also grant credit for most of the CLEP subject examinations. The credit granted is equivalent to the course which is taught at BYU. For additional information, contact the Credit Evaluation Office, B-150 ASB.

New Transfer Applicants

The primary factors considered in granting admission to a transfer student are grade-point averages for all previous college work and the results of a confidential interview with the student's bishop or clergyman. Other factors, such as leadership ability and missionary and military service, will be given consideration by the University Admissions Committee.

The following materials must be submitted by the appropriate deadline dates:

1. The completed application form (Parts A and B)
2. Official transcripts of all previous college work (An official transcript from each school attended is mandatory.)
3. A $15.00 nonrefundable admissions evaluation fee
4. The confidential interview report completed by the student and his or her bishop or other appropriately designated church or school official

Transfer students should have a minimum approximate grade average of 2.5 (A = 4.0). Students with fewer than 24 semester hours of transfer credit must also submit official high school transcripts (Part C) and results of the American College Test.

New Students from Foreign Countries

In addition to meeting the necessary academic qualifications described above for new freshman or transfer students, applicants from foreign countries must submit a General Information and Confidential Statement of Finance form and an English Proficiency Test score. Correspondence should be directed to the Admissions Office, A-153 ASB.

Continuing BYU Students

Registration materials are prepared each semester for all students enrolled as daytime students during the previous semester. Students who attended Evening Classes, Special Courses and Conferences, or classes at centers for Continuing Education must apply for admission or readmission to register for daytime classes.

Notice of Acceptance

All students accepted for admission to the University should receive an official certificate of admission. The certificate of admission is valid only for the semester indicated, and students who wish to be considered for any other semester must notify the Admissions Office in writing prior to the designated deadline.

Admissions Advising and Counseling

It is the desire of the University to be of service to all who seek admission to BYU regardless of their admissibility. For this reason, several sources of information and counseling have been established to aid the student.

In most stakes of the Church, volunteers have been appointed as admissions advisers. They are given special training and information to assist students applying for admission, financial aids, and the Honors Program. The advisers have information about all Church schools and institutes. For more information contact A-81 ASB.

The Office of Admissions Counseling also offers assistance to students who are considering BYU and feel the need for professional guidance and evaluation. If a student is not admissible, this office will counsel regarding alternate educational experiences and suggest a program that will qualify the student for future admission to BYU. Any student who would like to meet with the admissions counselor should contact the Admissions Counseling Office, A-183 ASB.

The Office of School Relations is a service agency designed to assist both high school and junior college students. In addition to providing information for administrators and counselors in both public and private schools, this office also arranges campus tours for interested students. Correspondence should be addressed to the Office of School Relations, A-183 ASB.

New Student Orientation

Prior to the beginning of each semester, a special new-student orientation program is held for all new incoming freshmen and transfer students. Each academic college sponsors its own orientation program, allowing flexibility to the program content.

The new student orientation program is designed to help the new student make the personal, social, and academic adjustments to a successful college career. Information about orientation is mailed to new students one month prior to the semester for which the student has been admitted.

Reference Groups

Eight to fifteen students and a group leader, usually a faculty member, comprise a reference group. This noncredit class is specifically designed for freshman students who meet two hours a week, with their leader, for discussions and activities. Reference groups provide the direction for a positive university experience through helping class members explore in depth the significant aspects of the University community, together with their own personal meanings and goals.

The groups as they are organized and conducted develop the climate for students to build friendships and to have a forum for sharing ideas, feelings, and needs arising from the challenges confronting them at the University. They are given opportunities to gain knowledge about significant University resources, to develop the self-awareness and knowledge necessary for articulation of their individual goals, and to take concrete steps in the pursuit of those goals.

Reference groups are listed under General Studies 190.

Registration

Registration Office: B-130 ASB

Every student attending classes at Brigham Young University must register and pay tuition. New students receive their registration instructions and class request forms through the mail. Continuing students obtain registration instructions and class request forms by purchasing a Class Schedule twelve weeks prior to the semester for which they are registering (or ten weeks prior to Spring and Summer Terms.) The class request should be returned to the college advisement center by the end of the eighth week to receive first priority in class selection. Class request forms will continue to be accepted from the eighth week until the third week before school, but students lose their priority in receiving classes. A registration confirmation form listing the student's classes and tuition charge is mailed to the student three weeks prior to the semester. The student's registration is finalized by the payment of tuition. **Specific information and deadlines are on the first page of each Class Schedule.**

Late Registration. Students who do not complete their registration prior to the third week before classes must use the late registration procedures outlined in the Class Schedule. A late registration fee of $20.00 is charged.

Changes in Registration. To minimize changes in registration, students should exercise great care in planning their schedules. When a change in registration becomes necessary, students must obtain an add/drop card from their college advisement center or from the Registration Office. The approval and signature of each instructor involved in the change is required.

Classes may be added to a student's schedule only during the first ten class days of Fall and Winter Semesters. Classes may be dropped during the first twenty-five class days. A fee of $3.00 per class is assessed for each class dropped after the fifth day of classes.

During Spring or Summer Term, classes may be added only during the first five class days. Classes may be dropped during the first fifteen days of classes. A fee of $3.00 per class will be assessed for each class dropped after the third day of classwork. Complete change-of-registration procedures are described in the Class Schedule.

Withdrawal from Classes. Any student withdrawing from individual classes must follow the University procedure outlined in the Class Schedule. A student who does not officially withdraw will receive a failing grade.

Withdrawal from Evening Classes. A student withdrawing from any evening class must do so by notifying the Evening Classes Office and by completing the withdrawal forms. A student enrolled in evening classes who does not properly withdraw will receive a failing grade.

Complete Withdrawal from the University. Students discontinuing their entire registration at the University are required to clear their termination through the Office of the Dean of Student Life (B-238 ASB) and may be required to clear through the office of the dean of their college.

Limitation on Credit in One Semester. An undergraduate student in good standing may register for as many as 18 hours of credit in any one semester by following the regular registration procedure. Students who have completed 15 or more hours of college work and have a cumulative grade-point average of 3.5 (or a GPA of 3.5 in the previous semester) may register for 21 hours with the consent of their dean and the Dean of Admissions and Records.

Classes Taken for Audit. Students who wish to audit classes are required to wait until the last day of late registration. Audit classes must be submitted to the Registration Office on a Change of Registration form and be signed by the instructor. Audit classes will not appear on the student's transcript.

Records

Records Office, B-150 ASB

Classification of Students. At the beginning of each semester, students are classified for that semester as follows:

Credit hours earned	Classification
1-31.9	Freshman
32-63.9	Sophomore
64-95.9	Junior
96 and over	Senior

Full-time registration status is determined on the basis of a minimum 8½ semester hours. All students registering for fewer hours than the applicable minimum are defined as part-time students.

Students who have completed all requirements for the bachelor's degree and who are not seeking a second bachelor's degree must register as graduate students in a degree or nondegree program.

Credits. Approved University credit may be earned in the following ways:

1. Complete work in regular courses offered at BYU.
2. Complete college-level courses through Home Study, Evening Classes, or Continuing Education programs.
3. Transfer credit for courses completed at an accredited college to Brigham Young University. Credit from other schools must be submitted for evaluation to the Admissions Office, A-153 ASB, upon application for admissions to the University.
4. Pass a special examination in any course offered by the University. The courses offered in Religious Instruction are an exception to this rule. Arrangements for the examination are made through the department chairman of the department offering the course. A fee of $10.00 is charged prior to taking each special examination. Students who successfully pass the examination are charged $5.00 per credit hour (not to exceed a total of $50.00), which is paid to the Cashier's Office. These fees apply to undergraduate classes only.
5. Pass a general education evaluation test.
6. Complete the Advanced Placement (AP) examinations. Students who score a composite grade of 5, 4, or 3 in any subject may be granted up to 8 semester hours of college credit in that subject.
7. Complete the College Level Examination Program (CLEP). Brigham Young University will grant 3 semester hours for each subarea of the general examination in which the student scores 560 or higher.

   Brigham Young University will also grant credit for most of the CLEP subject examinations. The credit granted is equivalent to the course which is taught at BYU. For additional information, contact the Credit Evaluation Office, B-150 ASB.
8. Serve in the armed forces. A student who has been on active duty in the service for more than one year can receive 2 semester hours in physical education and 4 semester hours in military science.

A Guide to the Evaluation of Educational Experiences in the Armed Services, published by the American Council on Education, has been adopted by Brigham Young University on a basis of evaluating college-level training and experiences in the armed forces. Students desiring credit should bring their military service DD-214 forms to the Credit Evaluation Office, B-150 ASB.

Grading System

Grade-point averages are computed by assigning letter grades the following values:

A	4.0	C	2.0
A–	3.7	C–	1.7
B+	3.4	D+	1.4
B	3.0	D	1.0
B–	2.7	D–	0.7
C+	2.4	E	0.0

The A grade is given only to those students whose intellectual capacity and academic achievement are exceptional. Work of quality somewhat higher than average, but not of exceptional quality, receives a B. C indicates that the student has completed classroom work, outside assignments, and examinations in an average manner. Students who fail to reach the average academic achievement, but who do work of a quality still acceptable to the University, are given a D grade. A D grade receives credit even though the work done is not fully satisfactory. Students failing to achieve work of minimum University quality receive an E grade, for which no credit is given.

If a student withdraws officially from a class during the first two weeks of a semester, the permanent record will not show a registration for that class.

If a student properly withdraws from a class between the second and fifth weeks, the record will be marked W.

A student who discontinues attending a class at any time during the semester without completing the official withdrawal process will receive a grade of UW (Unofficial Withdrawal). A UW has the same effect as an E in the computation of grade-point averages.

The letter grade I (incomplete) is used to indicate that the required work for a class has not been completed. An I is given only when circumstances beyond the student's control make it impossible to complete the required work within the prescribed time. Arrangements must be made between the instructor and the student prior to the end of the semester. The I is never given when a student is failing or has failed a course. If there is justification for an I grade, the student has one year in which to effect a change. Students should not register again for the course if making up an incomplete. A re-registration invalidates the terms of the incomplete. An Authorization for Change of Incomplete form must be processed through the Records Office upon completion of classwork. A $3.00 fee (payable at the Records Office) is required for changing an incomplete to a letter grade. Students should be aware that an incomplete grade (I) is not computed in their grade-point average until one year has elapsed, at which time it will be changed to an IE and computed as a failing grade if the course requirements have not been completed and an official grade change submitted.

A grade of T is given to indicate course work in progress. This grade is only used in certain approved courses in which the course work may extend beyond the semester. The grade of T may be changed to a letter grade of A, B, C, D, or P upon completion of the work and submission of a Grade Change Authorization form to the Records Office.

NS is placed on the permanent record when a grade has not been submitted by the instructor. In case of an NS grade, one year is granted to effect a change on the permanent record to the correct grade. During that time, or until corrected, the NS grade will not be considered in computing grade-point average. After the one-year deadline the NS grade will change to a grade of E and will be considered in all grade-point average computations.

Once recorded in the Records Office, no final grade may be changed except to correct the permanent record when an error in calculation has been made by the teacher, in processing by the Computer Center, or by the Records Office. When such corrections need to be made, an official Grade Change Authorization form must be completed and sent to the Records Office.

Grade reports are mailed at the end of each semester to students who leave self-addressed, stamped envelopes containing their social security number at the Records Office. Grade reports are also sent to the parents of unmarried freshman students under twenty-one years of age.

Record Holds. A record hold will be placed on a student's record for failure to meet University obligations (fees outstanding, University Standards violations, etc.). No copy of the student's academic record will be released until the obligation is fulfilled.

Repeating Classes. Classes may be repeated in the following ways:

1. Repeat BYU courses at Brigham Young University.
2. Repeat at Brigham Young University courses taken at another university (A statement of equivalency

must be supplied by the BYU department chairman involved.)
3. Repeat at another institution courses taken at that institution and have the credit transferred to Brigham Young University

Note: A course repeated at an institution other than the one at which it was taken originally and other than at BYU will not be counted as a repeat.

When a class has been repeated, only the grade earned the last time the repeated class was taken is used in the computation of the student's grade-point average. Students are required to notify the Records Office following the completion of a repeated class.

Exception to University Policy

The Exception to University Policy Committee has been established for students who encounter situations which fall outside the realm of normal University procedure. Petitions for exceptions to University policy can be obtained from the Records Office (B-150 ASB).)

Degrees Offered

Associate Degrees

The University confers the following associate degrees:

Associate of Arts Degrees
Church Music
Church Theatre Specialist
Classical Civilization
Costume Specialist
Humanities
Performance Specialist
Piano Pedagogy
Portuguese
Spanish
Technical Theatre Specialist
University Studies

Associate of Science Degrees
Agricultural Economics
Agronomy
American Studies
Animal Science
Chemical Engineering Technician
Child Development
Civil Engineering Technician
Data Processing Technician
Drafting Technician
Electrical Technician
Electronics Technician
Family Living
Genealogy
Graphic Arts Technician
Horticulture
Justice Administration
Library Technician
Light Building Construction Technician
Materials Science Technician
Nursing
Photographic Technician
Planning-Cartographic Technician
Public Health
Secretarial Technician
Travel-Tourism
Welding Technician

Baccalaureate Degrees

Each department, on the basis of appropriateness for the area of study involved, determines which type of bachelor's degree it awards. Some departments are permitted to offer both. Candidates will receive the degree designated by their department. The University confers the following baccalaureate degrees:

Bachelor of Arts Degrees
American Studies
Asian Studies
Chinese
Communications
Comparative Literature
Economics
English
European Studies
French
German
Greek
History
Humanities
Interior Environment
International Relations
Italian
Japanese
Latin
Latin American Studies
Philosophy
Political Science
Portuguese
Russian
Scandinavian Studies
Spanish
Spanish-Speaking American Studies
Theatre and Cinematic Arts

Bachelor of Science Degrees
Accounting
Agricultural Economics
Agronomy
Animal Science
Anthropology-Archaeology
Botany
Building Construction Technology
Business Education
Business Management
Chemical Engineering
Child Development and Family Relationships
Civil Engineering
Computer Science
Design and Graphics Technology
Economics
Electrical Engineering
Electronics Technology
Family Resource Management
Family Studies
Food Science and Nutrition
Geography
Geographic Planning
Geology
Health Sciences
Home Economics Education
Horticulture
Industrial Arts Teacher Education
Justice Administration
Manufacturing Technology
Mechanical Engineering
Medical Technology
Microbiology
Nursing
Physical Plant Administration Technology
Psychology
Range Science
Recreation Education
Sociology
Social Work
Statistics
Technical Teacher Education
Youth Leadership
Zoology

Bachelor of Arts or Bachelor of Science Degrees
Chemistry
Clothing and Textiles
Communication Disorders
Elementary Education
Mathematics
Physical Education
Physics
Special Education
University Studies

Bachelor of Arts or Bachelor of Fine Arts Degree
Art and Design

Bachelor of Arts or Bachelor of Music Degree
Music

Bachelor of Independent Studies Degree
Independent Studies

Advanced Degrees. For a list of graduate degrees offered, see the Graduate School section of each department in this catalog.

Graduation Requirements

Credit Requirements. A candidate for a bachelor's degree must complete a minimum of 128 semester hours of credit.

Upper-Division Requirements. A minimum of 40 semester hours of upper-division credit (classes numbered 300 to 599) is required for a bachelor's degree.

Major Requirements. Students must complete at least 20 semester hours in their major department, 10 of which must be earned on the BYU campus. They must also satisfy any additional departmental requirements.

Residence Requirements. At least 30 semester hours of credit taken in residence at BYU are required for a bachelor's degree. A maximum of 10 semester hours earned at BYU centers for Continuing Education or at LDS institutes may be applied toward this 30-hour requirement. A student must register and be on campus during two semesters—not necessarily consecutive—to satisfy the residence requirement. The residence requirement may be waived for certain programs completed through the Division of Continuing Education if joint approval is given by the dean of the sponsoring college and the dean of the Division of Continuing Education.

Grade-Point Average Requirement. To be cleared for graduation, all degree-seeking students must achieve at least a 2.0 (C) cumulative grade-point average. Transfer students must have a 2.0 (C) grade-point average for both their residence credit at BYU and their cumulative college credits.

Correspondence Credit. A maximum of 36 semester hours of correspondence credit may be applied toward fulfillment of the 128-semester-hour requirement for a baccalaureate degree. A maximum of 18 semester hours of correspondence may be applied toward the associate degree.

D Grade Credit. Not more than 18 semester hours of D grade credit may be applied toward completion of the bachelor degree requirements nor more than 10 semester hours of D grade credit for the associate degree requirements.

Second Bachelor Degree Requirements. A minimum of 30 semester hours must be completed at BYU after the awarding of the first degree, of which at least 10 hours must be completed within the new major. A student will qualify for a second bachelor's degree when the following requirements are satisfied: (1) BYU general education requirements, (2) major requirements, (3) minor requirements (if required by department), (4) residence requirements, (5) religion requirements, and (6) all other graduation requirements set forth in the catalog for bachelor degree candidates.

Deadlines for Transfer, Correspondence, and Incomplete Credit. All incomplete grades must be removed from a student's record and all transfer and correspondence credit must be on file in the Records Office at least four weeks prior to commencement.

Application for Graduation. All students desiring to graduate must officially apply for graduation. Students applying for the bachelor's degree should do so during their junior year. Students applying for the associate degree should do so at the beginning of their sophomore year. Application forms are available at the student's college advisement center. The final deadline for the completed application form and the graduation fee ($15.00) for a bachelor's degree or $6.00 for an associate degree) must be submitted to the Cashier's Office, D-155 ASB, no later than September 15, 1978, to December graduation; January 15, 1979, for April graduation; and May 15, 1979, for August commencement. Students who apply after the deadline dates will automatically be considered for the next semester's recognition. The Evaluation Office, B-150 ASB, will notify the student in writing of the general education and University requirements remaining to be completed for a degree from Brigham Young University. The application fee is a one-time fee. If the student does not graduate on the date indicated on the application, the evaluation will be held for future graduation.

Junior English Proficiency Examination. To be eligible for the bachelor's degree, all students must either pass the Junior English Proficiency Examination or have completed Engl. 212, 215, 251, or 316 at BYU after September 1, 1971, or Engl. 252, 312, 315, 316, or 415 at BYU after September 1, 1976, with a grade of B− or higher. Those electing to take the examination should do so during the first semester of their junior year. The examination is scheduled for the second Saturday of each semester and midsemester. Arrangements for the examination must be made through the college advisement centers.

Attendance at Commencement. All candidates for graduation are encouraged to attend the commencement and convocation exercises. Diplomas will be mailed to students after grades from the final semester are submitted and all graduation requirements are certified as being completed.

Adherence to University Standards. Students' graduation may be delayed or denied if they are found to be in violation of the Brigham Young University Code of Honor.

Two General Education Programs. A candidate for a bachelor's degree must complete the Former General Education Program or the New General Education Program. The appropriate program is determined according to the student's first semester enrollment at BYU. Students who entered BYU as new freshmen before Winter Semester 1976 or as new transfer students before Winter Semester 1977 will be required to complete the Former General Education Program. Students who entered BYU as new freshmen Winter Semester 1976 or thereafter or as new transfer students **Winter Semester 1977 or thereafter** will be required to complete the New General Education Program.

New General Education Program

Students who entered BYU as new freshmen Winter Semester 1976 or thereafter or as new transfer students Winter Semester 1977 or thereafter will be under the New General Education Program.

General Education Required Evaluations. A candidate for the bachelor's degree must successfully complete evaluations in three areas: Category I, Category II, and Category III. ,

Evaluations. The New General Education Program substitutes required evaluations for required courses. An evaluation is a University measurement, test, demonstration, oral examination, essay examination, etc., of a student's mastery of skills and knowledge. To pass a general education evaluation a student must show the ability to apply specified skills and to use sufficient appropriate knowledge to demonstrate these skills.

Completing General Education Requirements. There are three categories of requirements. Category I evaluations determine whether the student has mastered fundamental academic skills in reading, writing, basic mathematics, and health education. Category II evaluates ability to compare, weigh, analyze, synthesize, etc., using the substance of a number of academic fields. Category III evaluations require depth of preparation, whereas Categories I and II place more emphasis on breadth.

General Education Requirements	**Number of Evaluations**	**Normal Credit Hours of Preparation**
Category I (Basics)		
Reading and Writing	2	4
Basic Mathematics	1	2
Health Education	1	1
	4	7
Category II (Breadth)		
Arts and Letters	3	9
Natural Science	*3	9
Social Systems	**3	9
	9	27
Category III (Further Skills)		
Extramajor Skill	1	***9 +
Advanced Writing	1	3
	2	12
TOTAL	15	46

*Physical Science and Biological Science broad evaluations and one other required of all students.

**American Heritage evaluation, for which Social Science 100 is preparatory, is required of all students

***Only the culminating class is challengeable for GE credit

Advanced Placement, CLEP, and other national tests: Certain scores on precollege work such as these qualify students for BYU credit and serve as the equivalent of passing selected GE evaluations. The Graduation Evaluations Office (B-150 ASB) has details.

Administration of Evaluations. Evaluations are administered at various times during each semester and term. An evaluation schedule is printed in each semester's Class Schedule indicating the time and locations the evaluations are to be administered. Specific details are available at the Testing Services, Learning Services Center, General Education Office, Reference Group Office, and at college advisement centers. The fee schedule for GE evaluations is as follows:

1. Evaluations without further charge will be offered one time only to students enrolled in preparatory courses.
2. The fee for taking any Category I evaluation is $5.00.
3. The fee for taking any Category II or III evaluation is $10.00.

For further particulars consult the current Class Schedule.

Preparation for Evaluations. A student may take any of the evaluations at any scheduled time. An evaluation guide is available in the Bookstore for each evaluation. Each guide lists the skills and knowledge required, suggests how to prepare, and includes examples from the evaluation or exam. Students may also see copies of all evaluation guides which are on file in each college advisement center and in the Reserve Library.

A student may prepare for an evaluation in one or any combination of the following ways:

1. Preparatory Courses. Register for a course listed in the Class Schedule as "preparatory" for a given evaluation. A preparatory course is specifically intended to prepare students for the evaluation. "Supplementary" courses are also available for students who desire preparation by means other than a preparatory course. Supplementary courses may prepare students to pass evaluations but are designated for other purposes as well.

Should students feel capable of passing the evaluation before the end of the eleventh week of the preparatory class, they may take the evaluation, and, upon passing it, officially withdraw from the course, accepting a "pass" grade instead of a letter grade. They may also continue to attend the class even though they have officially withdrawn. Students who remain in the course and pass the general education evaluation at the end of the course (the evaluation is often given as part of the final examination) will be given a letter grade for the course. Which letter grade is given is, in that case, up to the teacher, but no student who passes the general education evaluation can be failed in the course.

2. Learning Services Center. A special center has been created to aid students in their individual preparation to pass the Category I evaluations in reading; writing, and math. The center is located in 3126 Harold B. Lee Library.

3. Individual Study. If students are sufficiently prepared to challenge an evaluation, or if they prefer to prepare for an evaluation individually in group study or through Home Study, those options are also available. Students should follow instructions in the evaluation guide for the specific evaluation desired and may take the evaluation without enrolling in the preparatory class.

Evaluation Pacing Schedule. Generally students follow their own pace for challenging evaluations. There is no required schedule to follow. However, a department or college may recommend or even require some particular schedule for its majors in order to fit all the requirements into minimum time. Usually students should plan to finish Category I no later than their second semester. Students should plan to finish Categories II and III by the end of the sixth semester.

Transfer Credit Evaluation. Transfer students' records are evaluated on a course-by-course basis. Each transfer course that is equivalent to a BYU general education preparatory course will be recognized as an evaluation passed. A written evaluation of the transfer credit will be mailed to the student by the Transfer Credit Evaluation Office soon after the student is accepted for admission to BYU. The evaluation states which classes have been accepted and which general education evaluations will be satisfied on that basis. The student's college advisement center evaluates transfer courses in relation to major requirements.

Students who receive an **Associate of Arts** or an **Associate of Science** degree **before** transferring to BYU will have all of their general education requirements considered completed with the exception of the Category III evaluations, which will need to be completed at Brigham Young University.

Students who transfer before receiving an associate degree will be evaluated on a course-by-course basis. Those students who use College Board or other nationally or school administered examinations to fulfill requirements for their associate degree will be evaluated on a course-by-course basis also.

Associate Degrees (New General Education Program)

Upon completion of an approved two-year curriculum, the Associate of Science degree or the Associate of Arts degree will be awarded at the regular University graduation exercises. A minimum of 64 semester hours of credit is required. A candidate for an associate degree must satisfy the following New General Education Program Requirements:

General Education Requirements	**Number of Evaluations**	**Normal Credit Hours of Preparation**
Category I (Basics)		
Reading and Writing	2	4
Basic Mathematics	1	2
Health Education	1	1
	4	7
Category II (Breadth)	*5	15
Arts and Letters		
Natural Science		
Social Systems**		
TOTAL	9	22

*No more than two evaluations in any one area

**The American Heritage evaluation, for which Social Science 100 is preparatory, is required of all students

Former General Education Program

Students who entered BYU as new freshmen before Winter Semester 1976 or as new transfer students before Winter Semester 1977 will be required to complete the program listed below:

Area	**Credit Hours**
American History and Government	3
Biological Sciences	6
English Composition	6
Health	2
Humanities	6
Physical Education	6
Physical Sciences	6
Social Sciences	5

A student must also complete one of the two options described below:

1. Mathematics, statistics, logic, science
2. Foreign language—an intermediate or advanced course

Area Requirements

American History and Government. The general education requirement in this area may be satisfied by completing one of the following courses or combination of courses: Hist. 170 (available through Home Study only) or 171, Hist. 120 and 121, or Hist. 121 and PolSci. 110, or Social Science 100 (A student may take an examination that will, if passed, satisfy the American history and government requirement. Arrangements for the examination are made at the BYU Testing Center, 3002 HBLL.

Biological Sciences. A student must complete a minimum of 6 semester hours selected from the following approved courses:

Agricultural Economics 105, Agronomy and Horticulture 105, and Animal Science 105
Biological and Agricultural Education 200
Botany. Any botany course with a number below 469, except 161 and 377
Honors 213R
Microbiology. All courses with numbers below 490 except 391 and 392
Zoology. All courses with numbers below 490 except 381

English Composition. A minimum of 6 semester hours must be completed: Engl. 115 during the freshman year and Engl. 251, 312, 315, 316 or 415 or Phil. 105 during the sophomore or junior year. The student's major department will designate which course the student should complete.

Health. This requirement may be satisfied by completing Health 130 or by a special examination arranged with the Department of Health Sciences. Exception: Nursing students may satisfy this requirement by completing Nurs. 106 and 156; elementary education majors may satisfy this requirement by completing Health 361; secondary education majors may satisfy this requirement by completing Health 362.

Humanities and Fine Arts. A student must complete a minimum of 6 semester hours selected from the following approved courses:

Art and Design. All courses in art history and appreciation and—101, 102, 103, 104, 105, 106, 107, 109, 110, 205R, 206R, 207R, 311, and 312
Classical Civilization 110, 331, 341, and 342
Communications 100, 101, 102R, and 301
English. All undergraduate literature courses except Engl. 251 and 420
Foreign Languages. All undergraduate literature courses
Humanities and Comparative Literature All undergraduate courses below 490
Interior Environment 240, 330, 331, and 430
Music 101, 103, 484, and 485
Philosophy All courses under 448R except 105, 205, 305, 354, and 355
Theatre and Cinematic Arts 115, 117R, 121, and 417R.

Physical Education. A minimum of 2 semester hours, selected from any of the Physical Education 100-series courses, will satisfy the physical education requirement. One-half credit hour should be taken each semester in the freshman and sophomore years. Students expecting to complete this requirement with credit for military service or through other University-approved programs should check with the Credit Evaluation Office, B-150 ASB.

Students who have completed a minimum of one year's service duty in the military may receive 2 semester hours of physical education credit. Students qualifying for this credit should bring their DD-214 form to the Credit Evaluation Office, B-150 ASB. Exceptions: One hour of physical education credit is awarded for successful completion of two years of on-campus ROTC Leadership Laboratory courses. Students qualifying for exemption must provide the Credit Evaluation Office, B-150 ASB, with written verification from the ROTC program.

Physical Sciences. A student must complete a minimum of 6 semester hours selected from the following:

Chemistry. All undergraduate courses
Geology. All undergraduate courses except 312 and 410.
Physics. All courses with numbers below 471 except 391 and 392
Statistics 221

Social Sciences. A minimum of 5 semester hours must be completed from the following approved courses:

Agricultural Economics 112, 350R, 355, and 390
Anthropology and Archaeology All undergraduate courses
Asian Studies 101
Child Development and Family Relationships 210, 360, and 361
Economics. All undergraduate courses
General Studies 107
Geography. All undergraduate courses
History. All courses below 485
Indian Education 307
International Relations 499
Political Science. All undergraduate courses except 301 and 303
Psychology. All undergraduate courses except 373 and 374
Recreation Education 337
Sociology. All undergraduate courses except 205
University Studies 300R

Mathematics, Statistics, Logic, and Science; or Language Requirement. Each student must complete one of the two following options:

1. **Mathematics, Statistics, Logic, and Science.** Six semester hours selected from the following:

    Botany 201, 370, and 372.
    Career Education 115
    Chemistry 105 and 111
    *Computer Science 130, 131, 132, and 133
    Economics 388
    Geology 311
    Mathematics. Any undergraduate mathematics course numbered 100F or higher
    Microbiology 201 and 331
    Philosophy 205 and 305
    Physics 105, 110, and 300
    Psychology 374
    Statistics. Any undergraduate course from the Department of Statistics having a prerequisite of Mathematics 100F or higher
    Zoology 201 and 321

*Only one computer science class may be used in the mathematics-statistics-logic-science area.

2. **Language.** Successful completion of a 201 foreign language course (intermediate level) or its equivalent. This requirement may also be filled by the successful completion of a 301 foreign language class, or by any more advanced language, literature, or culture class in a particular foreign language.

Associate Degrees (Former GE Program)

Upon completion of an approved two-year curriculum, the Associate of Science degree or the Associate of Arts degree will be awarded at the regular University graduation exercises. A minimum of 64 semester hours of credit is required A candidate for an associate degree must satisfy the following general education requirements.

Former General Education Program	Associate of Science	Associate of Arts
English Composition	6	6
American History and Government	3	3
Health	2	2
Physical Education	1	1
Humanities	2	3
Biological Sciences	2	3
Physical Sciences	2	3
Social Sciences	2	3

Exceptions

1. Two-year engineering-technician students are not required to complete the biological science and social science general section groups.
2. Nursing students are not required to complete the humanities general education group or Health 130.

Of the total of 64 credits, at least 20 must be taken in residence; a total of 18 credits may be taken by correspondence. However, 15 semester hours of work completed on the BYU campus and 5 semester hours taken at BYU centers for Continuing Education or at LDS institutes will satisfy the residence requirements for the two-year program. (The residence requirement may be waived for certain programs completed through the Division of Continuing Education if joint approval is given by the dean of the sponsoring college and the dean of the Division of Continuing Education.) A maximum of 10 D credits will be accepted, but both cumulative and BYU grade-point averages of 2.0 or above are required.

University Requirements

New GE Requirements	Bachelor Degrees	Associate Degrees
Religion	14	8
Physical Education	1	.5
Physical Fitness	.5	.5
Major and Electives	65.5	32
MINIMUM TOTAL	128	64

Note: Under the Former GE Program, physical education is included as a general education class (see page 13). Religion requirements for both programs are as specified below.

Religion Requirement

One religion class is required for each full-time enrollment of 8½ semester hours or more by an undergraduate student at BYU until a total of 14 semester hours in religion has been earned toward a baccalaureate degree or 8 hours toward an associate degree. Part-time students must complete one religion class for every 16 hours of BYU credit completed.

Any religion class in the 100 through 400 series may be taken to meet the religion requirement. In computing the 14-semester-hour total requirement, no more than 4 hours of religion credit at BYU or elsewhere will be counted from any one quarter or semester. The required religion courses will be 2 hours per semester for freshmen, sophomores, and juniors. The required courses for seniors will be only 1 hour per semester.

Book of Mormon. All undergraduates must complete 4 semester hours in the study of the Book of Mormon. This requirement may be completed by taking RelA. 121 or 421 and 122 or 422. Returned missionaries and upper-division transfer students should enroll in 421 and 422.

Transfer Credit from LDS Colleges and Institutes. A student may transfer religion credit to BYU to meet the requirement in religion. No more than 4 hours of religion credit from any one quarter or semester will be counted toward the religion requirement. Institute credit will be accepted only if the institute director certifies that the course was taken for institute credit and was in conformance with college standards. Transfer students will be required to complete one religion class per semester at BYU until they graduate or complete the 14-semester-hour requirement.

Students Required to Study Off Campus. Students required to study off campus to fulfill degree requirements are required to register for religion during that semester through Home Study, a BYU Continuing Education center, or an LDS institute.

Bible Credit from Non-LDS Colleges and Universities. Bible credit from accredited non-LDS universities and colleges will not satisfy the religion requirement. The transfer credit will, however, apply as elective credit toward the total hours required for graduation.

Credit Completed at Centers for Continuing Education. A student must complete one religion class for every 16 hours of academic credit completed at BYU centers for Continuing Education.

Requirements for Second Baccalaureate Degree Candidates. Students who register at BYU for a second baccalaureate degree, after having received a first at another university, are required to take one religion class per semester. The Book of Mormon requirement must also be satisfied.

Scholastic Recognition at Graduation

Effective September 1, 1978, there will be three designations in recognition of high scholarship: graduation "summa cum laude," graduation "magna cum laude," and graduation "cum laude." These awards are made on the basis of excellence shown in college-level credits earned at BYU and other accredited institutions (a minimum of 45 semester hours of college credit must be earned at BYU) prior to the commencement date.

Summa Cum Laude is awarded to the top 1.0 percent of the baccalaureate candidates in each college who have earned a minimum of 45 semester hours of credit at BYU.

Magna Cum Laude is awarded to the top 1.1 to 5.0 percent of the baccalaureate candidates in each college who have earned a minimum of 45 semester hours of credit at BYU.

Cum Laude is awarded to the top 5.1 to 10.0 percent of the baccalaureate candidates in each college who have earned a minimum of 45 semester hours of credit at BYU.

Scholastic Recognition Each Semester

The dean of each academic college at the close of each semester will post a list of names of students who are ranked in the top 5 percent of their colleges for the given semester, who have earned a minimum of 15 credit hours, and who have earned a minimum grade-point average of 3.5 or higher in all classes

Fees and Financial Assistance

University Fees

The University reserves the right to change these figures without notice.

All students who register will be required to pay tuition and fees at the time of registration. **Students are held responsible to pay the correct amount of tuition and fees (in U.S. dollars).**

A fraction of an hour is counted as a full hour for assessing fees. The tuition and fees paid as a part-time student do not entitle one to health service, student activity privileges, or physical education suit and facility privileges.

The charge for noncredit courses or for auditing courses is the same as for credit courses. Noncredit courses taken by part-time students will be assessed on the basis of hours involved in lecture classes. For example, three hours of lecture a week would be considered three semester hours and would be charged for accordingly. Therefore, if a student were taking seven credit hours plus a noncredit class involving two or more lecture hours per week, he or she would be considered a full-time student and must register as a full-time student. For courses in which no lecture hours are involved—for example, dissertations and theses—tuition and fees will be based on hours being carried during the semester, as determined by the supervising professor.

With the exception of students enrolled in the Law School or in the Graduate School of Management, all students at the University who have completed 144 or more semester hours of credit prior to the term or semester for which they are registering will be designated as advanced-standing students. Among those who have advanced standing are students completing their first or second bachelor's degree, those taking classes while fulfilling a change in academic majors, graduate nondegree students, and graduate degree-seeking students.

Students in this category should be aware of the nonrefundable overload fee for registrations of over 16 hours per semester or over 8 hours per term. Because a subsequent reduction of course load will not relieve the overload assessment, advanced-standing students should register for exactly the classes they need.

The undergraduate tuition rate applies only to those undergraduate students who have completed less than 144 credit hours prior to the beginning of the semester or term for which they are registering.

Full-time classification for both undergraduate and graduate students is registration for over 8 credit hours per semester or for over 4 credit hours per term.

Tuition and General Fees (Effective Fall Semester 1978)*

	Per Semester (Fall or Winter)		Per Term (Spring or Summer)	
	LDS Member	Non-Member	LDS Member	Non-Member
Undergraduate Students				
Full-time	$420	$630	$210	$315
Part-time	$ 43 per hour	$ 65 per hour	$ 43 per hour	$ 65 per hour
Advanced-Standing Students				
Full-time	$470	$705	$235	$352
Part-time	$ 48 per hour	$ 72 per hour	$ 48 per hour	$ 72 per hour
Graduate School of Management Students				
Full-time	$600	$900	$300	$450
Part-time	$ 61 per hour	$ 92 per hour	$ 61 per hour	$ 92 per hour
Law School Students				
Full-time	$770	$1,155	$385	$577
Part-time	$ 79 per hour	$119 per hour	$ 79 per hour	$119 per hour

*Approximately 70 percent of the cost of operating the University is paid from the tithes of the LDS Church. Therefore, students and families of students who are tithe-paying members of the Church have already made a significant contribution to the operation of the University. Because nonmembers will not have made this contribution, they are charged a higher tuition than are members, a practice similar in principle to that of state universities charging higher tuition to nonresidents.

Late Registration Fee

Late registration fees will be assessed full-time and part-time students for failure to complete registration on scheduled dates.

Semester Registration: **$20.00**

Term Registration.

See Class Schedule for Spring and Summer Terms.

Any student whose check is dishonored by the bank will be charged a handling fee of $5.00. If the check is for tuition, there will be an additional charge of the late fee in effect at the time the check is redeemed.

Tuition Refunds—Semester Registration

In the event of withdrawal by a student, a refund will be made on the basis of a charge of $10.00 ($5.00 for a part-time student) even though the student does not complete registration or attend school, plus a per-day charge of 3 percent of the total tuition and fees paid or payable for the semester. The days charged for will be the school days beginning with the first day of the semester in which classes were held following the date on which the student registered, to the day on which the student reported the withdrawal to the Office of the Dean of Student Life.

Late fees are not refundable.

Any refund due a student because of withdrawal from school will be made only by check, through the mail, approximately three weeks from the date on which the student reported the withdrawal and surrendered the receipt or activity card to the Office of the Dean of Student Life.

No refund will be granted to a student who is asked to withdraw for scholarship or other reasons.

Class Fees

AnSci. 130R, (Equitation)	$ 85.00
Archaeol. 455R	200.00
Chemistry deposit (lab)	10.00
FRM 370	
Resident students*	110.00
Married nonresident students	8.00
*All resident students must pay a $25 00 nonrefundable deposit prior to registration, the balance to be paid at the time of registration.	
Geol. 410	220 00
Music 159R (30-minute lessons)	80.00
Music 160R, 359R, 360R, 660R (45-minute lessons)	100.00
PE 128 (Bowling)	12.00
PE 130 (Equitation)	85.00
PE 195, 250, 296 (Skiing) (nonrefundable)	15 00
YthLdr. 480	100.00

Student Teaching Fees

ElEd. 440	$45.00
ElEd. 578R (2 credit hours)	15.00
ElEd 578R (4 credit hours)	25.00
SecEd. 476	45.00
EdPsy 584R, 684R (2 credit hours)	15.00
EdPsy 584R, 684R (4 credit hours)	25.00
All departments 479	45.00

This fee is to be paid at the time of application for student teaching. An additional $10.00 late fee is assessed if application is completed after March 31 for Fall Semester and October 15 for Winter Semester. The $10.00 late fee is not refundable under any circumstances.

Refunds—Fees for Instruction in Music

Students who withdraw from registration for private instruction before the semester begins or during the first week of the semester will receive a refund of the total amount paid.

Students who withdraw after they have begun their private instruction will be charged 10 percent of the total fee, the full cost of each lesson taken or each lesson missed without notifying the teacher, and one-half the cost of the remaining lessons in the course.

Applications for refunds are made at C-550 HFAC.

Miscellaneous General Fees and Fines

Admission evaluation fee (nonrefundable)	
Undergraduate	$15.00
Graduate (including non-degree-seeking)	25.00
Automobile and motorcycle registration* and parking fee	
Zone B	
Fall and Winter Semesters	20.00
Winter Semester only	10.00
Spring and Summer Terms	10.00
Summer Term only	5.00
Zone C	
Fall and Winter Semesters	6.00
Winter Semester only	3.00
Spring and Summer Terms	3.00
Summer Term only	1.50
Zone D	
All or part year	2.00
*Registration is mandatory but no fee is charged if the student elects NOT to park on campus.	
Bicycle registration (Provo City license)	3.00
Change of registration fee (for each class dropped after the fifth day of classes each semester or after the third day of classes each term)	3.00
Change of grade fee (unless the charge is the responsibility of the University)	3.00
Duplicate activity card	3.00
Exemption examination (to exempt a student from taking a required class)	10.00
Examination, special equivalency (undergraduate)	
Nonrefundable fee to take exam	10.00
Per-credit-hour charge upon successful completion of exam (The maximum fee in any one subject shall not exceed $40.00 in addition to the examination fee. Each examination will be treated independent of any other examination and the charge will apply accordingly.)	5.00
Examination, special equivalency (graduate—all classes numbered 500 and above)	
To update credit, to transfer credit from a non-accredited or foreign university, or to challenge credit, the examination fee is the same amount as registration for the same number of semester hours.	
Examination, repeat foreign language for advanced degree	10.00
Graduation fee (nonrefundable)	
Bachelor's degree	15.00
Master's degree	20.00
Doctoral degree	25.00
Graduate student service fee (for graduate students using University facilities without formal registration for University classes) per-semester-credit-hour rate	
General College two-year terminal certificate	6.00
Holds placed on credits for unpaid bill	2.00
Identification photo	3.00
Physical education locker	1.00
Records search fee	1.00
Recital fee (solo or joint recital)	35.00
Spouse activity card (nonrefundable) per semester	5.00
Thesis binding (4 copies)	11.00 to 15.00
Traffic violation fines variable, according to violation	
Transcript fee (pay at Records Office)	2.00
($2.00 for first copy on each order, plus $1.00 for additional copy)	

Estimated College Expenses

Educational expenses have been deliberately kept at a minimum at Brigham Young University. At a time when yearly costs at public colleges are typically well above $2,500 and private college expenses are above $3,500, BYU continues to offer a unique high-quality educational experience for much less. This is possible because of Church financial support, which covers more than 70 percent of the University's total expenses. An undergraduate student at BYU may expect the following basic costs:

	Fall Semester	Winter Semester	Spring Term	Summer Term
*Tuition and fees	$ 420	$ 420	$210	$210
Board and room	640	640	270	270
Books and supplies	130	130	60	60
	$1,190	$1,190	$540	$540

Personal expenses must be added to these totals.

*Tuition and fees for non-LDS undergraduate students are $630 for each of the Fall and Winter Semesters and $315 for each of the Spring and Summer Terms.

A student entering the University should have made arrangements to cover enrollment expenses and should have funds on hand sufficient for at least the first semester. University financial aid is available to supplement student and family savings through one or more of the following programs: scholarships and awards, student loans, and student employment. Eligibility for each is described below.

Scholarships and Awards

Undergraduate Scholarships are incentives and rewards for scholastic excellence. Ordinarily, successful scholarship applicants will have grade-point averages above 3.6 (4.0 = A) and, in the case of high school seniors, composite American College Test scores above 26.

Academic scholarships include financial awards to cover half or full tuition, and recipients are selected on the basis of academic achievement. Additional financial grants are added to scholarship awards when recipients have demonstrated serious financial need. Consideration of financial circumstances is given if the student submits the ACT Family Financial Statement or CSS Financial Aid Form as explained in the scholarship application.

Students who wish to be considered for scholarships must submit all application materials outlined in the scholarship application to the Student Financial Aids Office, A-41 ASB, by the following deadlines:

Scholarship Application Deadlines

Fall/Winter Semester (to include Fall and Winter Blocks)	
Spencer W. Kimball Scholarship and talent applicants	February 15
Continuing students	March 1
New freshmen	April 30
Transfer students	July 1
Winter Semester only	
New freshmen and transfer students	November 1
Spring/Summer Terms (for both terms)	
All applicants	March 1
Spring Term only	March 1
Summer Term only	May 1

All scholarship applicants will receive written notification of their standing within six weeks following the scholarship deadline.

Talent Awards are available in leadership, art, communications, dance, theatre and cinematic arts, speech and drama, and music. These awards are given primarily on the basis of the student's demonstrated talent, rather than on scholastic achievements alone. Their values range from partial to full tuition and fees for one year. The application deadline for all talent awards is February 15. Interested students should contact the department related to their talent for more information.

Grants-In-Aid are available to deserving students who have commendable college records and show acute financial need. These grants are typically restricted to upperclassmen nearing graduation and generally cover a portion of tuition expenses. A student may apply for a grant-in-aid by arranging for a personal interview at the Student Financial Aids Office and by submitting a formal application for financial assistance.

Athletic Grants-in-Aid are awarded to outstanding athletes to support their study while representing the University in collegiate athletic competition. BYU head coaches recommend deserving players to the University Financial Aids Committee, which in turn, in compliance with National Collegiate Athletic Association regulations, makes the awards.

ROTC Financial Aid/Scholarships. Both Army ROTC and Air Force ROTC offer scholarships on a competitive basis to qualified students enrolling or enrolled in their programs. ROTC scholarship students receive all tuition, fees, books and associated costs, and a $100 monthly subsistence allowance. Both scholarship and nonscholarship students enrolled in the courses numbered in the 300 and 400 series receive the $100 monthly subsistence allowance. Interested students should consult the Professor of Military Science for Army ROTC information or the Professor of Aerospace Studies for Air Force information, located in 320 or 380 Wells ROTC Building.

Danforth Graduate Fellowships. These fellowships are available to outstanding graduating seniors who plan college teaching careers and plan to study for the doctorate or other appropriate terminal degrees. Applicants, male or female, single or married, must be less than twenty-five years of age and must demonstrate outstanding academic ability. Fellowships are open to persons of any citizenship for study in U.S. graduate schools.

Danforth Fellowships may be held concurrently with any other national fellowship; however, the Danforth Fellowship will be without stipend until the other fellowship lapses.

The present maximum annual stipend is $2,025 plus tuition and fees for single students. Married students receive $2,200 plus tuition and fees and dependency allowances for children.

The BYU liaison officer may nominate four students to the Danforth Foundation. All interested students should contact the liaison officer, Dr. C. Terry Warner (106 HGB), before October 1. All applicants must take the Graduate Records Examination on or before the October test date.

Scholarships for American Indians. Assistance in obtaining American Indian scholarships and awards may be obtained by contacting the BYU Indian Education Department, 115 BRMB.

Student Loans

Church Long-Term Loans are available to worthy Church members who are full-time students in good academic standing and whose combined personal and family resources (including any scholarships, awards, grants, and campus employment) are inadequate for the continuation of full-time study. These loans are not available to freshmen or to students with outstanding student loans from other sources. Long-term loans are negotiated with a note that requires a cosigner for all applicants.

Full-time students may borrow up to the current cost of tuition each semester.

The maximum cumulative amount to any one student is $2,500.

Short-Term Loans are available for emergency assistance to students whose income is assured but delayed. These loans bear no interest but must be repaid within the current semester. Short-term loans can cover tuition, books, fees, or other school expenses up to the semester cost of tuition for students who are in good academic standing. Cosigners are also required for these loans.

Federally Insured Student Loans can be negotiated with any participating lending institution. Needy BYU students may apply for this type of loan at their local bank, credit union, or savings and loan institution.

Interest is normally paid by the government while students are in school if their family income is low enough to qualify. Repayment of the principal and interest by students begins after they have completed their course of study.

For current information on the stipulations and amounts available under this Federally Insured Student Loan Program, students should contact their local bank or lending institution.

Basic Educational Opportunity Grant (BEOG). The federal government provides grants of $200.00 to $1,300.00 per academic year to students who can demonstrate financial need. Application is made directly to the government. If a student qualifies for funds, the university certifies attendance and eligibility. After the first day of class, the student requests payment from the government. BYU does not act as a dispersing agent for the grants. The BYU Financial Aids Office has application forms and will assist students in the application process.

Student Employment

The Employment Office assists students in finding part-time employment, both on and off campus.

The amount of money earned through part-time work usually is not sufficient for complete self-support; therefore, the University recommends that students not attempt to support themselves entirely through part-time employment while in school. Such a program leaves little time for academic work and those extracurricular activities necessary for a well-rounded education. Furthermore, no student is permitted to work more than twenty hours per week on campus. It is therefore suggested that students arrange for some outside support to supplement their part-time earnings.

Students needing employment are urged to register with the Employment Office, C-40 ASB, as soon as possible after they arrive in Provo and are available for work. Hours available for work and the possession of skills required by employers are very important. Inasmuch as the number of students seeking part-time work is very high, those whose needs are great are requested to report at the Employment Office periodically after filing their initial applications.

Many students will not succeed in finding employment immediately; some will be delayed three or four weeks, while some could go an entire semester without finding suitable work.

BYU has adopted the policy that non-U.S. citizens with F-1 visas should not be granted work permits during their first semester. This applies to all students on F-1 visas who attend BYU, including those who have been in the U.S. at other colleges. All international students must have a U.S. social security number in their possession before applying for work. Please check with the International Student Office, A-235 ASB, to determine your status before applying.

Special Academic Programs

Honors Program

The Honors Program, which is part of the College of General Studies, provides an alternate program of general education for undergraduates of exceptional promise. It is open to qualified students in every college of the University; students participate in Honors while completing the degree requirements of their respective departments. Detailed information is found in the List of Courses section.

Forums and Lyceums

Throughout the history of Brigham Young University, students have had the privilege of receiving special visits from General Authorities of the Church, including members of the First Presidency and the Council of the

Twelve Apostles, who prepare messages especially for them. The University has also brought to the platform distinguished resident faculty members and prominent visiting speakers and artists who provide insight into contemporary civilization and provide evening programs of great cultural value. Forum assemblies are held usually in the Marriott Center, at 10:00 a.m. each Tuesday on alternate weeks.

The most celebrated performing artists in the world present lyceum programs at Brigham Young University. These concerts highlight the cultural activity of the campus. Cultural International Series are presented in the Marriott Center, Concert Artist Series in the de Jong Concert Hall, and Chamber Series in the Madsen Recital Hall as evening concerts. During the 1977-78 school year, the following were scheduled for the Forum and Lyceum series:

Forums

September 20	Todd Britsch—BYU Professor of Humanities, Classics, and Comparative Literature
September 27	Raymond Moody Author of *Life After Life*
October 4	Dorothy Nelson Dean of USC Law School
October 18	Emma Lou Thayne LDS Poet and Author
November 1	Daniel Boorstin Librarian of Congress
November 15	Robert Goldwin—Former White House Consultant; Director of American Enterprise Institute
December 6	Ben Bloxham—BYU Professor of Church History
January 10	James Mason—BYU Professor of Music
January 24	Sylvan Wittwer—Professor of Horticulture at the University of Michigan; Food Production Specialist
February 7	Mary Ann Wood—BYU Professor of Law
February 28	Samuel Huntington—Professor of Government at Harvard
March 14	Martha Peterson—President of Beloit College
March 21	Peter Laslett—Member of Cambridge University Group for History of Population and Social Structure
April 4	Herman Kahn—Director of Hudson Institute

Lyceums

Distinguished Artist Series
- Grant Johannesen, *piano*
- Misha Raitzin, *tenor*
- Elmar Oliveira, *violin*
- Costanza Cuccaro, *soprano*
- Utah Symphony Orchestra
- Daniel Shafran, *cello*

Cultural International Series
- Philharmonia Hungarica Orchestra
- Les Brown and His Band of Renown
- Massenkoff Russian Folk Festival
- Hungarian Folk Ballet of Budapest and Gypsy Orchestra

Prestigious Chamber Series
- Cherry Rhodes, *organ*
- Bulgarian String Quartet
- French String Trio and Michel Debost, *flute*
- Nash Ensemble of London

Special Events
- Puccini's Opera, *Tosca*
- Ballet West, *The Nutcracker*

Preprofessional Programs

Students who plan professional academic training after they leave Brigham Young University can complete preprofessional study at the University. Since the professional schools generally make no specification of major and since there are no majors at Brigham Young University in these preprofessional areas, students may major in any department. The students' major department will assign an adviser to give assistance in planning a program that will fulfill the graduation requirements of their department. Career advisement should be obtained from the following appropriate advisement offices:

Dentistry

Adviser: Elda Banner, 391 WIDB

Good grades and high Dental Admission Test scores are essential for dental school admission. Minimum course requirements for most dental schools are: Engl. 115, 316 (or 312 or 315); Math. 110; Chem. 105, 106, 351, 352, 353; Physics 105, 106, 107, 108 (or 201, 202); Zool. 201 (or 114, 115), 203. Dental school catalogs should be consulted for other prerequisites.

Although a few dental school applicants are admitted after three years of predental education, students should select a major and plan to complete a bachelor's degree. The selection of a major should fit the student's interests and provide a career alternative if the student is unsuccessful in his or her primary objective.

Students should plan their major requirements with their departmental adviser and contact the predental adviser for assistance with planning their predental study and dental school application.

Law

Chairman: Monroe J. Paxman, 311 KMHW

The grade-point average and Law School Admissions Test score are the primary factors on which law schools base their admission decisions. Most schools require a bachelor's degree only; the presence or absence of particular courses seldom affects admissions decisions.

Students should select a major field which interests them and which will provide them with a basis for an alternative vocational choice should their plans to finish law school not be realized. Even though no particular prelaw major is best for all students, there must nevertheless be substantial academic content in the prelaw training. In addition, students should supplement their major field by taking intellectually demanding courses that will develop broad educational foundations and the mental skills required of the successful law student or lawyer—the ability to analyze, to reason, to read carefully, to think abstractly, and to speak and write precisely.

Students should contact members of the University's Prelaw Committee for more detailed counseling on the manner in which their particular needs and interests may best be shaped into a suitable prelaw program. Copies of "On Preparing at BYU for Law School" can be obtained from committee members or from college advisement centers on campus.

The Prelaw Association, a student organization, sponsors meetings each semester that present information on preparing for law school, and opportunities are provided to converse with admissions officers from many law schools. Private interviews may be scheduled through the Placement Center, D-240 ASB.

Students interested in admission to the J. Reuben Clark Law School should contact the Law School directly and request a copy of the J. Reuben Clark Law School Bulletin. A bachelor's degree is required for admission to the Law School.

Medicine

Adviser: Elda Banner, 391 WIDB

Students desiring to enter medical school should plan to complete four years of college in a rigorous program of study. Competition for spaces is intense, and successful applicants have earned excellent grades and scored high on the New Medical College Admission Test.

Courses needed to fulfill the requirements of most medical schools are: Engl. 115, 316 (or 312 or 315); Math. 110, 109 (or 112); Chem. 105, 106 (or 111, 112), 351, 352, 353; Physics 201, 202 (or 121, 122); Zool. 201 (or 114, 115), 203. Medical school catalogs should be consulted for other prerequisites. The selection of a major should reflect the student's interests and allow for an alternative career.

Students should plan their major requirements with their departmental adviser and contact the premedical adviser for assistance with planning their premedical study and medical school application.

Occupational Therapy

Adviser: Rulon Francis, 122 RB

Upon completion of the preprofessional program for occupational therapy, preoccupational therapy students graduate with a B.S. degree in physical education (preoccupational therapy emphasis). They are then eligible to enter an approved school offering a certificate or master's degree program. They may also elect to complete the first two years of this program and transfer to another school offering the Bachelor of Science degree in occupational therapy.

Students transferring into preoccupational therapy must have a cumulative GPA of 3.0 or better. If they are to remain competitive for acceptance into an occupational therapy school, they should realistically maintain a 3.5 or better GPA.

Physical Therapy

Adviser: Rulon Francis, 122 RB

Upon completion of the four-year preprofessional program for physical therapy, the student graduates with a B.S. degree in physical education (prephysical therapy emphasis). The student is then eligible to enter an approved school that offers certificate or master's degree programs. The length of physical therapy programs is approximately fourteen months for a certificate and two years for a master's degree.

Students transferring into prephysical therapy must have a cumulative GPA of 3.0 or better. If students are to remain competitive for acceptance into physical therapy school, they should realistically maintain a 3.5 or better GPA.

Upon completion of the two-year preprofessional program for physical therapy, a student is eligible to enter one of a number of approved schools offering a bachelor's degree in physical therapy. The length of the course is two years plus clinical affiliations.

Veterinary Medicine

Adviser: Stan Allen, 357 WIDB

Competition for freshman class spaces in veterinary school is extremely keen, and preveterinary students should expect to achieve about a 3.5 GPA in rigorous preprofessional course work to receive serious consideration for admission. Most successful applicants have completed at least the bachelor's degree. Because course requirements differ with individual veterinary schools, students should familiarize themselves with entrance requirements for the schools to which they will apply. Course work typically includes the following:

English, two semesters; mathematics, three semesters; chemistry, five semesters; biology, five semesters; physics, two semesters; humanities, three semesters; social science, three semesters.

It is also important for students to have experience with animals and veterinary medicine. Students are advised to incorporate the preveterinary curriculum into an academic program leading to a career alternative.

Biomedical Engineering, Dental Hygiene, Health Administration, Optometry, Pharmacy, Physician's Assistant, Podiatry, and Public Health

Adviser: Elda Banner, 391 WIDB

Students interested in the above health professions may receive assistance from the adviser in planning preprofessional course work and making application to the appropriate professional and graduate schools. Catalogs and other materials are available in the Health Professions Advisement Office, 391 WIDB.

Division of Continuing Education

The purpose of the Division of Continuing Education has been to provide educational programs and University services for the part-time and off-campus students. These educational opportunities have also assisted the regular daytime students. Brigham Young University cooperates with the Continuing Education programs as sponsored by the Church Educational System and its various components.

The same University standards required of regular daytime students apply to those enrolled through the Division of Continuing Education while they are on campus.

Organization. Because the Continuing Education program represents both Brigham Young University and the Church Educational System, the departmental and center descriptions will be distinguished in the material that follows.

Requirements for Enrollment in Continuing Education Classes. Anyone having the desire and the necessary ability may enroll for noncredit classes. Credit classes are open to—

1. matriculated daytime students;
2. nonmatriculated students who hold bachelor's degrees (degree-seeking graduate students should be admitted by the Graduate School);
3. anyone nineteen years of age or a high school graduate;
4. junior or senior high school students by special permission in selected workshops, seminars, etc.;
5. those who wish to audit classes.

Students who have been suspended from Brigham Young University or any other institution of higher learning for any reason are not eligible to register in Continuing Education classes until such suspension is cleared.

Student Responsibility. Acceptance in a Continuing Education course **does not** constitute acceptance by Brigham Young University or any other university on a degree-seeking basis. It is the responsibility of students to gain admission to the university of their choice as degree-seeking students through the normal procedures listed in the university catalog. At BYU, this may be accomplished through the Office of Admissions and Records.

The Division of Continuing Education at BYU takes no responsibility for the acceptance of a student's credit toward a degree at any university. Clearing courses for acceptability of any kind prior to enrollment is the responsibility of the student.

Evening Classes

The Department of Evening Classes has as its major responsibility providing college-level educational opportunities for adults. In addition, the department is a service for daytime students who experience scheduling difficulties and/or prefer the evening sections which usually meet only once a week. Classes leading to associate, bachelor, and graduate degrees are offered.

A schedule of courses is published each semester and is available upon request at the Evening Classes office, 225 HRCB. Evening classes are also listed in the daytime class schedule as sections 90 through 99.

Regular Daytime Students may enroll in Evening Classes by filling out their preregistration form with Evening Classes (section 90 through 99) information obtained from the Class Schedule.

Community Students may register early by mail, by phone, or in person. Tuition and fees and the courses available are listed in the Class Schedule. At scheduled times prior to and during registration, advisers are available to aid students in planning their course work.

For more information contact the Department of Evening Classes, 225 HRCB, Ext 2872.

Home Study

Through its Home Study program, BYU offers more than 300 college-level credit courses, providing practical and convenient solutions for students with scheduling problems and for working students, armed forces personnel, and others who cannot take all their classes in residence. Home Study is education through a modified correspondence medium—the University's "portable program," which can bring BYU to the student anytime, anywhere.

A student may register for a Home Study course at any time during the year by mail or by registering at the Home Study Office, 210 HRCB. Home Study catalogs, which list all courses offered and include complete policies, procedures, and enrollment forms, are available without charge.

The student completes course lessons and takes or mails them to the Home Study Office, which then sends them to a BYU faculty member, who checks, grades, and returns them with comments and suggestions. Final examinations are required in all Home Study courses, unless otherwise stipulated in the catalog. Students are given one year to complete the course, although most do so in much less time.

American Indian Services and Research Center

The center is an off-campus program for Indians that provides innovative assistance to Indian people throughout the United States and Canada. Established in 1958 under the sponsorship of Spencer W. Kimball and the authority of the University and Board of Trustees, the center began to assemble information on every phase of Indian culture. In 1966, the organization was expanded to include research and services to Indians in the areas of agriculture, economics projects, alcoholism, and other areas of need across a whole range of pressing social and economic problems.

Projects under the direction of the center include the following: Alcoholic Resource Center, agricultural projects, training programs, cooperatives, small business projects, arts and crafts projects, farm-equipment leases, vocational training, individualized self-instructional packages, research, family education material, self-image development, communication workshops and seminars, and media production.

For more information, contact the American Indian Services and Research Center, 234 HRCB, Ext. 4364.

Special Courses and Conferences

The Department of Special Courses and Conferences, organized to fulfill the academic needs of people from many different age groups and diverse educational backgrounds, provides flexible and varied programs, both credit and noncredit, on the BYU campus and throughout Utah County. Noncredit tuition varies according to the length of the course and any special expenses involved. Credit tuition is the same as for day school.

Persons representing groups that desire special workshops or conferences on the BYU campus should contact the Department of Special Courses and Conferences, 242 HRCB. Ext. 3556

Travel Study

Different areas of the United States and of the nations of the world are more closely interrelated today than ever before through the marvels of high-speed transportation and long-range communication, making travel abroad a more important and more exciting educational experience than ever before. Through Travel Study, Brigham Young University truly makes the world its campus.

Semester Abroad In Jerusalem (January and June, six-month program).

Semester In Hawaii (January and August, regular semester).

Washington Seminar (Spring Term, 8 semester hours' credit). Upper-level or graduate students from virtually every major may serve internships in congressional and administrative offices, the Supreme Court, law offices, etc. Participants hold seminars with top government officials, receive on-the-job training, and gain valuable insight into our political system while receiving stipends.

Project Guatemala (Field Service credit given). Service to Guatemalans is combined with a study and language program for majors in a variety of fields in this truly unique educational experience. Spanish 101 and 102 are the minimum prerequisites.

Travel Study Tours

World of the Bible departures: December
Hawaii Fall Semester (August)
Hawaii Winter Semester (January)
Mediterranean Cruise (September, October)
Jerusalem Study Abroad (January, June)
Panama Canal Cruise (January)
South Seas Odyssey (March)
World of the Bible (April)
Faculty Workshop Mexico, Central and South America (April)
Student Art Workshop (Spring)
Washington Seminar (Spring, Summer)
Temples and South America
Jerusalem Study Abroad (June, January 1978-79)
Lands of the Scriptures Workshop (June)
Temples and the World of the Bible (June)
Student European (June)
Adult European (June)
Church History (July)
Hawaii Fall Semester (August)
Around the World '79
Orient '79

For further information and an up-to-date list of programs, contact the Department of Travel Study, 202 HRCB, Ext. 3946.

Study Abroad

BYU Study Abroad programs offer the student full credit for study in different lands, where new sights, new sounds, and untapped sources of learning and understanding unfold.

Study Abroad is designed for students who wish to increase their knowledge and understanding of their own nation and of other lands and people through purposeful educational travel under the direction of the University. Participants must adhere to standards of The Church of Jesus Christ of Latter-day Saints.

Program residence centers are located in Vienna, Austria; Paris, France; Madrid, Spain; London, England; Mexico; and Jerusalem, Israel.

For more information concerning Study Abroad, contact their office, 222 HRCB, Ext. 3308.

Off-Campus Lectures and Courses

The Department of Off-Campus Lectures and Courses provides educational services for geographical areas not served by BYU Centers for Continuing Education, thereby sharing the spirit of Brigham Young University with distant locations that would not otherwise have the opportunity of participating in BYU programs. Four primary programs are offered: Education Days, Know Your Religion, Special Seminars, and credit classes.

The Department of Off-Campus Lectures and Courses can be contacted at 124 HRCB, Ext. 2528.

Education Weeks

Education Week has been held annually on the BYU campus since 1922 and has gained nationwide attention. For the past several years, the program has been gradually expanding throughout North and Central America. In 1977 the program was presented in ninety-four locations, extending from Edmonton, Alberta, Canada, in the north to Houston, Texas, in the south and from Washington, D.C., in the east westward to the Pacific Coast.

Off-campus Education Weeks are usually three-day programs involving from six to ten faculty members, each presenting three hours of lecture on each of the three days. At times, local teachers are used in their areas of specialization as well.

Education Weeks information is available at the Jolley House, Ext. 2087.

Centers for Continuing Education

Sensing the obligation of the Church University to provide educational opportunities in harmony with LDS standards for persons living away from Provo, the Board of Trustees has established Continuing Education centers, offering Continuing Education services—including Education Week—to people in outlying areas. Students who expect to earn a degree from BYU may do a great deal of their work at a Continuing Education center, but at least 20 semester hours of credit must be earned on the BYU campus for a baccalaureate degree (15 semester hours for an associate degree). See the Graduation Requirements section of this catalog for residence requirements. Continuing Education centers represent both Brigham Young University and the Church Educational System in their program offerings.

BYU-California Center for Continuing Education, 12550 Brookhurst, Suite D, Garden Grove, California 92640, (714) 636-1890. Eighty-eight stakes of the Church throughout California participate in the California center's activities, which involve over 75,000 people annually. The educational activities are usually held in LDS stake centers, and events are generally cosponsored by LDS wards and stakes.

BYU-Ogden Center for Continuing Education, 555 24th Street, Ogden, Utah (801) 399-4455. The Ogden center offers upper-division and graduate courses in many of the University's academic departments.

BYU-Ricks Center for Continuing Education, Ricks College, Rexburg, Idaho, (208) 356-2516, and 2630 N. Yellowstone Highway, Idaho Falls, Idaho, (208) 523-4682. This center provides off-campus, credit evening classes in Rexburg and Idaho Falls each semester, summer evening classes in Idaho Falls, and summer day classes in cooperation with Ricks College.

BYU-Salt Lake Center for Continuing Education, 401 12th Avenue, Salt Lake City, Utah, (801) 328-0325. The Salt Lake Center offers courses through all colleges and departments of the University, making it possible for students and other interested persons to take much of their required course work in Salt Lake City. All general education requirements can be fulfilled at the Salt Lake Center.

Special Degrees

Associate and Bachelor of Independent Studies. Brigham Young University offers a special associate or bachelor's degree designed for adults. These degrees are of particular interest to persons already in various professions or businesses and to homemakers, armed forces personnel, and retired persons. The goal of these degrees is the development of the individual in a wide area of intellectual interests without focus on a major or minor in a specific field of study.

Applicants for the degree will be placed in individual programs of independent study. There are five areas, each to be completed as a unit:

Foundations
Man and the Meaning of Life
Man and Beauty
Man and the Universe
Man and Society

Students cover the prescribed material and curriculum outlines in each area and prove their proficiency. Following completion of these five areas of study, the student will complete an approved project that relates the skills and knowledge acquired in all areas to some problem or objective most relevant to his or her needs.

Previously earned credit is considered for transfer acceptance to this program, and some waivers of study areas are available depending on a person's experience, ability, and previous credits.

Information and degree application materials can be obtained by writing to Department of Special Degrees, 172 FB, Ext. 4351.

Associate Degree in Law Enforcement. Both the Salt Lake Center for Continuing Education and the Department of Home Study have programs leading to an associate degree in law enforcement. Interested parties may contact either office for details.

Associate Degree in Family Living. The Department of Home Study has arranged to facilitate an associate degree in family living for the adult who is not on campus. Specific information on this associate degree can be obtained from the Home Study office.

Associate Degree in Genealogy. The Associate of Science degree in genealogy is offered with two options in course work—

Option 1—Individual and Family Research or LDS Church Service
Option 2—Professional Genealogy

An associate degree in genealogy can serve as a stepping stone toward advanced studies such as history, language, geography, library science, etc., or it can be a terminal degree. It can also assist in successfully completing the LDS genealogical accreditation examination or can simply increase knowledge and skills in genealogy.

Business Programs

The need for continual development opportunities for managers throughout their careers is well attested to by the fast-changing pace of technological and organizational climates in response to the opportunities and problems of modern society.

Weekend Management Selected Seminars are usually held biannually on a weekend in major cities in the western states.

Summer Conferences are held each month, June through August, at Alta, Utah. The conferences are five-day intensive sessions of management development to meet the needs of modern managers.

For further information contact 256 FB, Ext. 2528.

Certificate Program

Adult Development and Aging. The BYU Adult Development and Aging Program operates in cooperation with the Rocky Mountain Gerontology Center with headquarters at the University of Utah. The consortium of schools associated with the center also includes Utah State University, Weber State College, and Southern Utah State College. This program requires 18 hours of course work and training in gerontology. Upon completion of the following program, a student will receive a certificate from the Rocky Mountain Gerontology Center:

Sociol. 365	Sociology of Aging	2 hours
CDFR 440	Family Life in the Middle and Later Years	2 hours
Health 563	Health and the Aging Process	2 hours
SocWk. 367	Seminar on Services for the Aging	2 hours
Cooperative Education Placement—Practicum		4 hours
Three elective courses from the approved list		6 hours

This training program is designed for students from most of the major academic disciplines. All credits taken within the required sequence will count toward graduation and may include course work in the student's major or minor field. The course work listed above is the equivalent to a strong minor in adult development and aging.

Student Services

Tutoring Service

Jerry L. Jensen, Coordinator (130 BRMB)

Through the College of General Studies, Brigham Young University provides a tutoring service for all BYU students who need help beyond their regular classroom instruction.

Tutors are students who have demonstrated competence in the subject for which they act as tutors and who have been authorized, by the department responsible for that subject, to act as tutors.

All possible help from the class instructor and, where available, from "help sections" of the course should be utilized before employing a tutor.

Tutors may be contacted through the Tutoring Service, 130 BRMB, Ext. 3826.

Veterans' Service

For information concerning educational benefits available to those who qualify under the Veterans' Readjustment Benefit Act, please contact the Veterans' Affairs Office, B-280 ASB, or call Ext. 4371. Forms for certification may be secured and processed to assure proper payment of benefits.

Entitlements under the Veterans' Readjustment Act will be authorized only to individuals who are satisfactorily pursuing their program of study or training and who are making satisfactory progress toward completion of the educational or vocational program stated on their latest application with the Veterans' Administration. Changes in the Veterans' Administration regulations further limit entitlements to only those individuals who are matriculated students in the University or who are following an approved program leading to matriculation (six months' maximum duration).

Individuals entitled to benefits under the Veterans' Readjustment Act who are denied enrollment in the University because of lack of satisfactory progress will be required to obtain approval of the Veterans Administration and the University before they will be again allowed enrollment privileges.

War Orphans Education Program. Students who are dependents of veterans under the War Orphans Education Program, and who are entitled to benefits, should also contact the Military Affairs Office for enrollment certification and related information.

Indian Students

Special opportunities are available for American Indian and Canadian Indian Students. Services include pre-college orientation; designated faculty and course offerings; academic, career, and personal counseling; financial assistance; and cultural enrichment programs. These students are urged to contact the Indian Education Department, 170 BRMB. (See also Indian Education in the List of Courses section.)

BYU Bookstore

The BYU Bookstore, located in the Ernest L. Wilkinson Center, offers a variety of merchandise and services to thousands of students, faculty, and staff. Textbooks, school supplies, and a large selection of trade books are the main items; but such things as art and office supplies, cards and gift items, cosmetics, clothing and sportswear, records and stereos, cameras, and briefcases may also be obtained.

The Bookstore also offers many services. A few of these include typewriter rentals, check cashing, money orders, special orders for books, gift wrapping, film processing, magazine subscriptions, copying services, and repairs for office equipment, cameras, fountain pens, and watches.

Placement Center

Prospective graduates should register and establish a relationship with the Placement Center during the Fall Semester of the year in which they plan to graduate. Each graduate is encouraged to work closely with the Placement Center to develop a personal approach in seeking and obtaining career employment.

The Placement Center is a service department that specializes in helping students locate career employment opportunities. By registering with the center, the graduate or prospective graduate gains access to many valuable services—services which include individual and group counseling, the arranging of on-campus student interviews with employer representatives, and the providing of information about specific job opportunities submitted by employers from business, industry, education, and government. The center also maintains a complete collection of books, articles, magazines, and brochures relating to employing organizations. Materials are also available on such matters as how to write letters of application, how to prepare resumes, and how to conduct oneself in personal interviews.

To maximize the number of employment contacts available to graduating students, the center works in close cooperation with deans, department chairmen, and liaison personnel in each academic department. Close relationships are also maintained with the advisement center located in most colleges.

Graduating students are encouraged to begin their career searches early and to register with the Placement Center, D-240 ASB.

Personal and Career Assistance Programs

Academic Standards

James MacArthur, Director (B202-ASB)

Students admitted to the University are expected to show satisfactory academic achievement and progress. Academic achievement is determined on the basis of the grade-point average earned by each student. To graduate from BYU a student must have earned a 2.0 cumulative grade-point average on all BYU work and all college work. Academic standards regulating continuing student progress are consistent with the graduation requirements. Students at any class level with a cumulative grade-point average of 2.0 or above will be considered in good academic standing (academic standing is determined by the **cumulative grade-point average of graded credits** earned at BYU).

Academic Warning will be given if the most recent semester grade-point average is below 2.0, even though the cumulative is at or above 2.0.

Academic Probation will be given when the cumulative grade-point average falls below 2.0, with the exception of freshman-level, **nontransfer students** completing their first semester at Brigham Young University. These individuals will initially be given Academic Warning. Students who have been placed on academic warning or probation are **strongly** encouraged to contact the Academic Standards Office to be sure they understand requirements that must be met in order to continue beyond the semester in which they are currently enrolled.

Academic Suspension may result from students' failure to bring their cumulative grade-point average up to 2.0 or above at the end of the semester or term in which they are on academic probation. Such suspension indicates that students may be denied continued enrollment privileges until such time as they have qualified for readmission through one of the readmission programs. Students who have been suspended academically a second time are denied further enrollment unless there were extraordinary extenuating circumstances leading to their dismissal.

Readmission. Students who have been academically suspended must establish their eligibility for readmission to the University by contacting the Admissions Office (A-183 ASB). Generally, the student should expect that specific preparatory work must be completed before an application for readmission will be considered. Students, whether they are on probation or not, may be subject to suspension from the University if it is determined that they are deficient in their academic achievements and progress.

Career Education Program

Elwood Peterson, Director (135 BRMB)

Career education is a lifelong process of personal and career exploration and development. This process involves continuous decision making based on personal evaluations of goals, values, and opportunities. It is particularly important to students preparing for their entry occupation and future life-style to receive effective information and guidance during the exploratory and planning process. Such timely assistance can enhance the efficiency and appropriateness of a student's academic and life preparation.

The Career Education Program provides assistance to all BYU students in making educational and career choices. Services include a class designed to teach decision-making skills, a laboratory to help students apply decision-making skills to the choice of a major or an occupational field, career life-planning workshops concerned with exploration of personal goals, interest and personal preference testing, and a corps of counselors to help students explore educational and occupational opportunities and to select a major best suited to these opportunities.

The Career Information Center, 135 BRMB, contains detailed, current information about numerous occupations, college majors, educational programs approved by national associations, professional licensing requirements for various states, and placement information about recent BYU graduates.

For information or assistance, come to the Career Education Department, 135 BRMB, or call Ext. 2687.

Counseling Center

Burton C. Kelly, Director (C-273 ASB)

Of primary concern to Brigham Young University is the welfare of each individual student. While obtaining an education, students often find themselves in situations where they need or desire to develop their interpersonal or social skills and are confronted with difficult decisions or problems of adjustment. Accordingly, they may seek the assistance of persons skilled in working with students in these areas. For this reason the University maintains a fully accredited Counseling Center, staffed by well-equipped, professional counselors.

The purpose of the Counseling Center is to promote the personal growth of individuals within society and within the University community. The services provided to students include counseling, skills development, and information.

Counseling. Many students seek counseling. In general they come to the center for reasons of growth or decision making. Specifically, they come for help in developing social and interpersonal skills, growing in greater self-understanding, dealing with study problems, and working through personal problems. Some students find that individual counseling on a one-to-one basis with a counselor offers greater assistance, while others may benefit more in a group counseling situation, where several students and a counselor meet together. In both individual and group counseling, the primary focus is not upon the students' deficits or upon long-term therapy—although the latter is not neglected—rather, it is upon assisting the student to grow, mature, and accept responsibility for his or her actions.

Skills Development. The Counseling Center provides programs to help students develop personal, social, and interpersonal skills for coping more effectively with college life and other situations. Students may participate in one or more of these learning programs, where they may be taught in the skills they wish to improve. Such a program may be individually worked out for each student through the help of a counselor.

Testing Services. Tests for achievement, ability, interest, and adjustment are given to all students who request them through a counselor. Data from these tests are used as a basis for counseling.

Student Life Learning Resource Center. A comprehensive current collection of essential educational, personal, social, and spiritual development information is maintained in the Student Life Learning Resource Center. The collection includes print media, filmstrip and tape-sound presentations, and videotape and cassette-audio presentations. There is an abundance of materials available relating to personal and social adjustment including such areas as: personality development, dating, marriage, budgeting, personal grooming, college adjustment, study habits, and an extensive selection of current catalogs from major universities and technical schools.

International Student Advisement

Max Swenson, Adviser (A-235 ASB)

The International Student Office, A-235, Ext. 2695, provides advisement and services to all individuals at the University who have entered the United States on F-1 or J-1 visas, or who are aliens with permanent residence in the United States. All correspondence regarding admission to the University should be addressed to the Admissions Office, A-153 ASB.

Personal and Career Services

Richard A. Heaps, Director (B-268 ASB)

The BYU Personal and Career Services office provides one centralized intake service for all students needing assistance from any student service or counseling agency on campus (i.e., students may now come to one location, B-268 ASB, for any service needed).

This office will meet (on a walk-in basis) with each student needing personal or career assistance, determine the student's need for services, examine alternative service resources available, and make immediate arrangements for these students to get to the best service(s) or help(s) to meet their needs.

Personal and Career Services also provides psychological, mental ability, and career testing in the same location (B-268 ASB) to meet specific informational and diagnostic needs of students and counselors.

Student Health Service

Dr. Cloyd Hofheins, Director (MCH)

Student health services are available at the Howard S. McDonald Health Center for all full-time students carrying 8½ credit hours or more who have a valid activity card. Part-time students who carry 2 or more hours, pay a special fee, and gain approval from Student Life, A-209 ASB, may also receive services at the center. The center functions year-round with regular clinic hours, by appointment, from 8:00 a.m. to 5:00 p.m., Monday through Friday. After 5:00 p.m. daily and all day Saturdays, Sundays, and holidays, the center is open to urgent care and there is an extra fee charged for seeing a physician during these times. Hospitalization, when necessary, is available at the Utah Valley Hospital.

The health center offers the following services at a reasonable rate:

1. Consultation with a nurse-practitioner, general physician, or specialist—by appointment.
2. Immunization
3. Pharmacy
4. Physical therapy or referral from a physician
5. Laboratory tests
6. X-ray examination
7. Emergency care twenty-four hours a day

A doctor may be summoned after hours for emergencies. There is an after-hour fee for such services. Services not available at the health center are available by referral at outside facilities.

Students may elect to prepay for their care at the health center by purchasing the Student Health Plan at registration. For more information on the Student Health Plan, see the brochure available at the health center.

To complement the services of the student health center, an insurance program designed to cover hospitalization and emergency care twenty-four hours a day is offered to all full-time students at a nominal cost. This voluntary program is fully endorsed by the University and provides for a wide range of medical services. Students not otherwise protected by health insurance are urged to secure this excellent service. For further information, insurance brochures are available at the health center.

Eligible students are not required to have insurance or to participate in the health plan in order to use the McDonald Student Health Center.

The health center is bound by the laws of confidentiality, and personal information will not be released to a third party without written permission from the patient.

Student Living and Activities

Residences

Quality apartment living is an important, indeed an integral, part of the total educational experience at BYU, and students should carefully consider the accommodations available in view of the type of living experience they desire, the amount of time available for activities within their housing situation, and their economic needs. Living accommodations are available on campus and in the surrounding community, and definite programs have been established within University residence halls and with landlords who rent to students off campus to integrate living experiences with the total University educational program.

Campus Housing

Campus housing includes board-and-room residence halls for men and women, apartment living for women, and married student apartments. Each residence hall is directed by a competent adult head resident who lives in the hall. Assisting the head resident in the board-and-room areas are several resident assistants—mature, advanced students who live with the student group, giving each student a close personal contact with the residence hall staff. Each student is known personally by the staff and has someone immediately available to assist with normal student problems.

The residence hall program is designed to provide the student with experiences in democratic self-government, development in the acceptance of responsibilities that go with maturity and independence, and assistance in learning to develop human relationships in working and living with others.

Residence Halls for Men and Women. Board-and-room services for both men and women are provided in Helaman Halls and Deseret Towers, and board-and-room services for women are provided in Amanda Knight and Allen halls. Helaman Halls consists of four halls for men and four for women: Deseret Towers has four halls for men and two for women; Amanda Knight Hall houses eighty-seven and Allen Hall houses seventy-seven women. Each hall contains student rooms, study rooms, recreation areas, central shower areas, adequate laundry and storage facilities, and a head-resident apartment. The central buildings for Deseret Towers and Helaman Halls feature spacious cafeterias, dining rooms, reception areas, offices, post offices, and vending facilities for the entire residence area. Amanda Knight Hall offers a cafeteria along with a lovely dining area for its residents and those of Allen Hall.

Apartment Living for Women. Housing for women is provided in Heritage Halls, which consists of twenty-four apartment-type buildings. Each apartment has a combination kitchen-dining-study room arrangement, three bedrooms, and a bath. In addition, there are large living rooms, a recreation room, head resident apartment, and laundry and storage facilities in each building. Six girls live in each apartment, cooperatively preparing their meals and purchasing their food. The apartments are completely furnished except for bedding, kitchen utensils, and dishes.

Help in the homemaking experiences of budgeting, buying, meal planning, and the selection, care, and construction of clothing is available from specialists assigned to Heritage Halls. Also, a specialist is available to assist students in planning social activities, developing recreational skills, and learning the wise use of leisure time.

Residences for Married Couples. Family accommodations for 612 married couples and their children are provided in housing developments known as Wymount Terrace and Wyview Park.

Wymount Terrace consists of family apartments arranged in quadrangles around enclosed lawn and play areas where children may enjoy themselves without being endangered by traffic. Each apartment has a balcony or porch overlooking the inner court and is furnished with a gas range, refrigerator, drapes, and garbage disposal. A limited amount of furniture is available for rent from the University. These apartments are not plumbed or wired for washers and dryers, but the area is served by three self-service laundry centers. Four apartment sizes are available in this area, and, as in other married-student housing, these units are assigned according to family size.

Wyview Park consists of one-, two-, and three-bedroom mobile homes placed on permanent foundations and connected to power, water, and sewer lines to provide all the conveniences of permanent homes. Each unit is equipped with air conditioning, refrigerator, garbage disposal, built-in gas range, carpeting in the living room and bedrooms, and built-in chests of drawers. A laundromat, a children's play area, an adult recreation area, a community assembly room, a community park, and a dairy products outlet are also available.

Applications for Campus Housing. Students who plan to enroll at Brigham Young University and live in a University residence hall should contact the Office of Student Housing, C-141 ASB, about a year in advance. A housing application form will be sent to each inquiring student. An application fee of $25.00 must accompany the completed application when it is returned to the University. A residence hall assignment and appropriate agreement forms are prepared on the basis of the date of receipt of the application by the housing office and are mailed to students in late spring or early summer.

Acceptance to the University. The validation of any campus housing reservation is contingent upon the student's official acceptance and admission to the University.

Rental Agreements. Students planning to live in campus housing will be expected to sign a rental agreement for the accommodations they will occupy. They should be prepared to live by the terms of this agreement once they have familiarized themselves with its terms, signed it, and returned it to the Office of Student Housing; this will avoid any possible misunderstanding or financial loss. Agreements are made for the academic school year.

Time of Arrival. Residence halls are not open to students prior to the announced opening date, which is usually the day before freshman orientation begins. The University does not advise students who are going to live in campus housing to arrive before that date.

Residential Housing

Brigham Young University students who live off campus must reside in University-approved housing. The University has formulated minimum specifications which all rental units in the community must meet to accommodate BYU students. During each school year, all rental facilities listed with the Residential Housing Office are inspected and classified according to their physical condition and arrangement.

Listing Service. The Residential Housing Office maintains a complete listing of all approved rental facilities in the community. Listing cards are kept up to date, giving complete and detailed information about each rental unit. At present, more than 19,000 students can be accommodated in modern residential apartments and privately owned homes. These accommodations consist of apartments and sleeping room facilities. The University requires that each landlord provide supervisory personnel to see that proper living standards are maintained.

Student Activity Center

The Ernest L. Wilkinson Center serves as the living room of the University, the center of college community life, where students may come to relax and participate in out-of-class activities which will foster well-rounded growth.

The games center, hobby center, photo studio, barber shop, post office, lost and found department, and outdoor rental area are all on the first floor. Facilities on the second floor include ballrooms, an art gallery, reading and stereo rooms, a television area, and a movie theater. The Bookstore and three restaurants are some of the Wilkinson Center's most important components, and other parts of the building house student government headquarters and offices of student publications.

Religious Opportunities

Students have many excellent opportunities to participate in religious activities at Brigham Young University.

BYU Stakes. The Church is organized into a number of stakes, and each stake is composed of several branches of 200 to 300 members each. The stakes and branches are organized specifically to provide students the maximum opportunity for active participation in programs of the Church. Spiritual growth and the development of a strong testimony of the divinity of Jesus Christ are goals fostered by the campus stake and branch organizations, whose programs are closely correlated at all levels with the activities of the University.

All single LDS students living away from home become members of one of the BYU branches. Married students not living in University housing may attend either the BYU branch or the city ward in which they reside.

Devotional Assemblies. Devotional assemblies are held, usually in the Marriott Center, each Tuesday on alternate weeks and are scheduled so that there is no conflict with classroom work. These assemblies enable students to hear messages of inspirational power from carefully chosen Church leaders, including many General Authorities of The Church of Jesus Christ of Latter-day Saints

Campus Organizations

There are at Brigham Young University well over 100 student organizations, representing every imaginable interest—honorary societies, special interest groups, geographical and missionary clubs, departmental organizations, and many others—each offering opportunities for service, academic growth, recreational and social activities, or a combination of all three.

For more detailed information, contact the student Vice-President of Organizations, 425 ELWC.

Student Government

All registered students are automatically members of the Associated Students of Brigham Young University (ASBYU). This body is presided over by a student-elected president, executive vice-president, and academic, athletic, culture, finance, organizations, social, student community service, women's activities, and freshman involvement vice-presidents.

These elected officers are responsible for the planning and implementation of their own programs. Many cherished BYU traditions such as Y Day, Preference Ball, and Homecoming are direct results of the efforts of student officers.

These elected student officers meet together weekly as an Executive Council. This group is the student voice to the University community, end its members are also members of several University committees.

Activities in student government are not limited to elected officers. During the school year, more than 6,000 students participate directly in either planning or administering the various projects and activities conducted by the ASBYU. For detailed information, visit the offices on the fourth floor of the ELWC.

Athletics

One of the first things the newcomer to BYU discovers is that Y students are enthusiastic sports fans and sports participants. As contestants and spectators, the students, through the athletic program, generate a vitality and appeal that cannot be duplicated.

Intercollegiate Athletics for Men

Brigham Young University is a charter member of the Western Athletic Conference (WAC), which affiliates BYU with six other schools: San Diego State, Colorado State, New Mexico, University of Texas at El Paso, Utah, and Wyoming. The Department of Intercollegiate Athletics—an arm of the College of Physical Education—sponsors teams that compete in ten intercollegiate sports: basketball, baseball, cross country, football, golf, gymnastics, tennis, indoor and outdoor track and field, swimming, and wrestling. The conference has produced several national team champions and scores of individual champions since it came into being in 1962.

BYU leads the WAC in the number of team championships won since the league was formed. The Cougars have won ten conference championships in wrestling, nine in golf, five in tennis, five in basketball, five in track, four in cross country, two in baseball, three in football, and one in swimming. Several national champions, all-Americans, and Olympians have emerged from the ranks of BYU athletic teams.

BYU has been the site of numerous major athletic events, including the NCAA track and field championships in 1967 and again in 1975 as a part of the BYU Centennial celebration. The NCAA national wrestling championships in 1969, six NCAA Far West regional basketball tournaments, and two NCAA regional baseball play-offs have been conducted at BYU in recent years.

Intercollegiate Athletics for Women

Brigham Young University is an active member of the Association of Intercollegiate Athletics for Women and belongs to the Intermountain Region of AIAW. Region VII (Intermountain) includes the colleges and universities in Arizona, Colorado, New Mexico, southern Idaho, Utah, and Wyoming and the University of Texas at El Paso.

Brigham Young University competes in eight sports: basketball, field hockey, golf, gymnastics, swimming and diving, tennis, track and field, and volleyball. The program is administered through the Women's Physical Education Department.

BYU has placed well in regional competition and has won several championships during the past few years. The volleyball team has consistently qualified to attend the national championship and has placed in the top eight positions, with the best placement being second in 1972.

BYU has hosted the National Gymnastics Championship and the National Volleyball Championship.

Extramural Sports

Extramural sports are designed to give expert performers a chance to compete with athletes from other universities in sports not included in the intercollegiate athletic program. Extramural sports are sponsored in archery, badminton, ice hockey, lacrosse, power lifting, rugby, skiing, soccer, and volleyball for men, and softball and synchronized swimming for women.

Intramural Sports

BYU's intramural program, consisting of more than seventy-five events and involving thousands of participants in both men's and women's activities, is one of the largest and most comprehensive in the United States. The purpose of intramurals is to provide opportunities for direct involvement and participation and to afford opportunities for fellowship, recognition, and leadership. Winning is deemed important, but participation is essential.

Any student may participate in intramurals either by joining a BYU ward or by participating in a housing-unit or independent team. In individual events a person may enter independently or as a representative of a housing unit or ward. Also, since intramurals are student governed, there are limitless opportunities for students to become involved as council members, league coordinators, sports managers, and officials.

Highlighting the year's events is the annual intramural awards banquet at which hundreds of awards are given in recognition of outstanding organizations, officials, athletic directors, and champions of the team and individual events.

Dance Performance Groups

Through the College of Physical Education, BYU sponsors outstanding dance performance groups in folk dance, ballroom dance, ballet, and modern dance. Each year these groups perform throughout the United States and in Europe.

In addition to great success in numerous prestigious performances, the International Folk Dancers have completed thirteen successful European tours, while the Ballroom Dance Team achieved its highest honor by winning first place in the British Open Ballroom Dance Championships in London. Orchesis and Theatre Ballet each present several excellent performances on and off campus each year.

All interested students are encouraged to become active members of these exciting groups.

Student Publications

One way to obtain practical writing and editing experience is through student publications. Both the student newspaper, the *Daily Universe*, and the yearbook, the *Banyan*, allow students to polish specific skills gained in classroom work. These publications are operated as laboratory experiences by the Department of Communications.

The *Daily Universe* is published five times weekly during regular semesters and twice weekly during the Summer and Spring Terms. More than sixty students staff the editorial, advertising, reporting, photographic, and business positions necessary to publish the paper.

The *Banyan* is the students' photographic record of each year's school activities. The more than fifty staff members who publish this volume gain valuable training in writing, editing, photography, and graphic art.

The *Brigham Young University Directory*, a listing of all BYU students, faculty members, and administrators, as well as student activities and church organizations, is also published by a student staff.

In addition to these three publications, several excellent departmental and college journals give students an opportunity to publish their own writings.

General University Services

University Library

The Harold B. Lee Library contains a collection that includes over a million bound volumes and an extensive collection of pamphlets and titles on microform. Numerous professional journals and other current serials, as well as local, regional, and national newspapers, are also available. The library is a depository for United States, United Nations, Mexican, and Canadian government documents and regularly receives publications of state and local governments.

The general library facilities are available to students, faculty, alumni, and other interested persons. Regularly enrolled students present their identification cards to borrow books; others may obtain a permit from the circulation librarian. The library is open during the academic year from 7:00 a.m. to 11:00 p.m. Monday through Friday, and from 8:00 a.m. to 11:00 p.m. Saturday.

The general collection and subject reference materials are available on open shelves on four of the five levels—two below and two above the ground floor. The library's special collections, many of which are confined to specific subject areas, are on the fourth level. An information booklet is available at the general reference desk to assist those who use the library facilities.

In addition to printed materials, the library maintains and provides access to an extensive collection of nonprint media through the services of the Library Learning Resources Division. This division provides academic support services in the selection and use of nearly all nonprint media materials and equipment, and its Instructional Graphics Department assists the faculty in simple preparation of instructional materials. Most nonprint services are located in the Herald R. Clark Building. Well-equipped learning resource centers (at various locations on campus and off campus, as well as within the Lee Library) provide special services for the use of nonprint learning packages. For additional information about these services, ask for a brochure at the general reference desk.

The facilities of other libraries operated by the LDS Church are also available to students of Brigham Young University. The Genealogical Society Library in Salt Lake City contains approximately 100,000 books and over 800,000 rolls of microfilm. The Utah Valley Branch Genealogical Library, operating under the general direction of the Genealogical Society, is headquartered at the Harold B. Lee Library.

Students and faculty may also use the facilities of other Utah college and university libraries through a cooperative arrangement instituted by the University and College Library Council of Utah. The BYU Library is a participating member of that council.

Facilities of the library of the Church Historical Department are available by arrangement to advanced students for research. The office is located in the new LDS Church Office Building in Salt Lake City, and is open from 8:30 a.m. to 5:00 p.m. Monday through Friday.

Cooperative Education

Director: Lane A. Compton, 371 CB

Cooperative Education at Brigham Young University is composed of educational programs derived from out-of-class activities in three categories: formal work experiences, independent study or research, and extended field trips. Essentially all courses in these programs have the unique numbers 299R, 399R, or 599R. Twenty departments have operating programs—some of which are not listed yet in this bulletin.

The Cooperative Education Office assists departments in locating work positions and processes contracts between the University and employers. Each department develops its own program to fit its own unique set of needs. Interested students should first contact their own department. Descriptive literature can be obtained from the Cooperative Education Office.

Alumni Association

Background

The Alumni Association was organized in 1893 to promote the general welfare of Brigham Young University. Today it serves more than 170,000 alumni and provides a number of valuable services and programs for students still at the University.

Membership Prerequisites

All former students are eligible for membership in the Alumni Association. There are no dues or membership drives; the association conducts solicitation for contribution to the BYU annual fund and special projects.

Services to Students

Services to students on the campus include scholarships; meeting facilities in the Alumni House; the annual commencement banquet; the commencement checklist for graduates; and miniature diplomas, which are presented to each graduate.

Services to Alumni

Services to alumni include many on-campus programs during Homecoming and commencement and other times of the year, alumni receptions held throughout the world, alumni travel programs with or without credit, the *BYU Today* newspaper (sent nine times a year to each member of the association), and the Aspen Grove Family Camp, located behind Mt. Timpanogos

Information

Further information on these programs and any others can be obtained by contacting the Alumni Association, Brigham Young University Alumni House, Provo, Utah 84602. Telephone (801) 374-1211, Ext. 2513.

Computer Services

Computer Services provides extensive computing facilities to all faculty, staff, and students. In addition to equipment, considerable computer library programs and experienced personnel are available to help users with their particular problems. Further information about services available should be addressed to the director's office, 167 TMCB. Ext. 5025. All users pay the costs of Computer Services operations according to approved funding-control procedures.

Consulting services are available at 146 TMCB, 424-A CB, 139 ESC, and 62 JKB. Hours are posted in each consulting room. The major computers on campus include the IBM 360/65, DEC-10, and IBM 7030. Over forty minicomputers are available in different departmental locations, and short "quickie" classes are conducted regularly in various basic computer subjects.

University Collections

Museum of Archaeology and Ethnology

The museum's archaeological collections consist of materials from both the Old World and the New World that relate to the cultural history of man. Special areas of interest—Mesoamerica, the American Southwest, and prehistoric Utah in particular—are emphasized in the museum displays. Most of the artifacts displayed have been collected by members of the Department of Anthropology and Archaeology while on field expeditions.

The ethnological collections consist primarily of material and items donated by people who are interested in the growth of the museum. Collections from Polynesia, Mexico, and the Southwest are on display. Of special interest is a display of Iroquois artifacts that reflect early rituals and customs.

Supplementing these materials are replicas of such famous archaeological discoveries as the Rosetta Stone and well-known relics from Palenque and Stela 5 from Izapa in Mesoamerica. Also among the museum collections are field excavation records, photographs, site survey cards, maps, and drawings of materials excavated by University archaeological expeditions.

These museum collections are open to the public and the student body for viewing on the first floor of the Maeser Building.

Ancient Instrument Collection

The BYU collection of over one hundred historical musical instruments was created with a gift from Lotta Van Buren, which consisted of her eighteen rare old instruments, costumes, and music library. Among the instruments are a consort of five old viola de gambas (including a bass gamba once owned by G. F. Handel), a viola d' amore by Storioni, two clavichords, and two small harpsichords constructed by Arnold Dolmetsch.

Other excellent instruments have been added by purchase, gift, and loan, including a large collection of over sixty-five Asiatic instruments on permanent loan from Lloyd Miller, a former graduate student.

Many instruments from the collections are on display on the 400 level of the Larsen Art Gallery in the Harris Fine Arts Center. BYU ensembles specializing in performance on historical instruments present several concerts annually and use many of these valuable instruments.

Fine Arts Collection and Gallery Shows

The Fine Arts Collection consists of paintings, sculpture, drawings, etchings, engravings, prints, lithographics, reproductions of art works, and slides. Among the well-known artists represented in the collection are Mahonri Young, Maynard Dixon, J. Alden Weir, John E. Costigan, Peter Hurd, John Twachtman, Ralph Blakelock, Frederick C. Church, Thomas Cole, Thomas Hill, Dominique Ingres, John Marin, Benjamin West, Camilla Corot, Arthur B. Davies, James Whistler, Winslow Homer, Edouard Manet, and Rembrandt.

Works frequently exhibited in the galleries of the Harris Fine Arts Center are drawn from the Memorial Collection of Utah Painters (both early and contemporary), the Lorraine Allen oriental art collection, the Dr. O. K. Cosia collection, the Karel Waterman collection, the Dr. and Mrs. Buris France Robbins collection, and contemporary invitational collections. In addition, annual shows exhibit current works of faculty members and students.

Geological Collections

The University's geological collections consist of an unusually complete series of minerals that number in the thousands and represent the great western mining districts and hundreds of other notable localities. Part of this collection once represented the nucleus of Salt Lake City's famous Deseret Museum collection.

The paleontological collections contain numerous invertebrate fossil specimens, as well as many vertebrates, especially fossil mammals and dinosaurs.

Life Science Museum

This museum is located in the new M. L. Bean Life Science Museum. All exhibits and collections formerly housed in the Grant, Brimhall, and B-39 buildings are now in the new museum.

The M. L. Bean Life Science Museum will be open Monday through Friday from 8:00 a.m. to 5:00 p.m. and on Saturday from 10:00 a.m. to 4:00 p.m. The exhibits will include habitat studies of local as well as exotic plant and animal species.

The Botanical Collection includes an herbarium of vascular plants, mosses, liverworts, lichens, algae, and fungi from many parts of the world. The vascular plant collection includes more than 10,000 species represented by over 160,000 herbarium sheets. The collection is made up principally of plants from western North America but includes many materials from the eastern states, Europe, Mexico, and Australia. Recent acquisitions of plants from Alaska, Greenland, Siberia, and the Canadian Arctic have added significantly to the collections of Arctic plants.

The herbarium includes more than 2,000 specimens from the Mediterranean region of Europe and from the Middle Eastern countries of Iran and Afghanistan. Separate collections of type specimens, poisonous plants, range plants, woody plants, and plant disease specimens are maintained. The herbarium is housed in B-49. The herbarium includes the collections of I. E. Diehl, W. D. Stanton, B. F. Harrison, Maxcine M. Williams, L. C. Higgins, N. D. Atwood, F. H. Sargent, and S. L. Welsh.

The Zoological Collections consist of a large series of vertebrate and invertebrate species from North America and from many foreign countries. These materials are available to teachers, advanced students, and visiting scientists.

The invertebrate collections include numerous specimens of insects and their near relatives as well as many representatives of other phyla of invertebrates obtained locally and from many distant places. Medically important arthropods such as fleas, lice, mites, and ticks are represented. Special collections include the Lynn and Kate Irene Meibos Collection of mollusk shells; the Tom Spaulding and Ashby D. Boyle butterfly collections; and the Elmer and Lucille Johnson bee fly collection containing many types. The Charles W. Leng, Charles Schaffer, Willis Blatchley, and Vasco M. Tanner collections of beetles and other invertebrates and the extensive collections of more than a half million insects are suitably preserved and available for research and other academic purposes. The Edgar P. Huffman collection of marine shells has recently been added to the collections.

The vertebrate collections consist of thousands of fishes, amphibians, reptiles, birds, and mammal research specimens. In addition to the representative series of local species, the vertebrate collections include the Chester Van Buren collection of South and Central American birds: the Robert G. Bee, John Hutchings, Merlin L. Killpack, Lloyd Gunther, Ashby D. Boyle, and J. Donald and Radia Daynes collections of birds' eggs; and the David Starr Jordan specimens of Hawaiian fishes. Staff members, graduate students, and friends of the University have contributed material from Mexico, South America, Africa, Formosa, Malaya, the South Pacific islands, and other areas throughout the world. The vertebrate collections also include the recently acquired big game trophy collections from Africa, India, and North America, contributed by M. L. Bean, A. Max Beach, W. Karl Brewer, and Mrs. L. O. Lillywhite.

Research grants from private and governmental agencies have made it possible to add materially to both vertebrate and invertebrate collections from southern Nevada, the Colorado River Basin, and other areas of the Intermountain West, Mexico, and Central America.

Broadcast Services

The purpose of Broadcast Services is to (1) provide quality family television and radio programs to the general public and (2) serve the teaching and training needs of the University's faculty and academic programs. Modern studios, equipment, and remote vans provide students with practical training in the areas of broadcast news, on-air operation, broadcast engineering, promotion, graphics, and radio and television program design and production.

Broadcast Services is comprised of the following three departments:

KBYU-TV. KBYU-TV (Channel 11) has administrative offices and studios in the Harris Fine Arts Center, with additional production facilities at the Media Production Studios located in the river bottoms area northwest of the campus. As an affiliate of the Public Broadcasting Service (PBS), Channel 11 airs a variety of nationally and locally produced programs to a potential viewing audience of 300,000 TV homes along the Wasatch Front of Utah, as well as to cable TV homes in northern Utah and southern Idaho.

KBYU-FM. KBYU-FM (88.9 MHz), which also broadcasts from the Harris Fine Arts Center, is one of the most powerful FM radio stations in Utah (32,000 watts). Eighteen hours a day KBYU-FM broadcasts classical music, fine arts, and news throughout central and northern Utah and southern Idaho. The station has been described by an executive of the Corporation of Public Broadcasting as one of the nation's top five public radio stations.

ITV. Instructional Television is housed in the Media Production Studios located in the river bottoms area northwest of the campus. ITV designs and produces programs for BYU classroom use. Instructors from the history, mathematics, physics, religion, and psychology departments have used the services of ITV to supplement their personalized instruction.

Research Division

The Research Division (Leo P. Vernon, Assistant Academic Vice-President—Research and Planning, A-333 ASB), is administratively responsible for organized research on campus, including projects supported by Research Division funds or by external agencies and organizations.

University funds for research projects are also available through the college and include support for project expenses, summer research fellowships, and academic-year research fellowships. Research proposals sent to external agencies for funding are processed through the Research Division, which assists in proposal preparation and administratively supervises the projects after they are funded.

In addition to faculty research projects, which use students extensively in supporting roles, the Research Division sponsors student-initiated work, such as the student projects supported by the Provo Rotary Club.

Organized research units have been formed to advance research programs in specified areas. These are designated as centers (reporting to the dean) or institutes (reporting to the Assistant Academic Vice-President—Research and Planning) and include the following:

Ezra Taft Benson Agriculture and Food Institute
David O. McKay Institute of Education
Institute for Studies in Values and Human Behavior
Family Research Institute
Translation Sciences Institute
Thermochemical Institute
American Indian Services and Research Center
Business and Economic Research Center
Communications Research Center
High Pressure Data Center
Language and Intercultural Research Center
Religious Studies Center
Charles Redd Center for Western Studies
The New World Archaeological Foundation

University Press

The Brigham Young University Press provides three major services to the University:

Scholarly Publishing. BYU Press, a member of the Association of American University Presses, is fully dedicated to the AAUP goal of excellence in scholarly publishing. The press focuses mainly—but not solely—on western regional studies, outdoor recreation, and early childhood education.

BYU Press has an expanding list of titles in print, with national and international distribution. Information regarding titles may be obtained from the Press Marketing Department, 206 UPB (Ext. 4167).

Authors, particularly BYU faculty members, are invited to submit manuscript inquiries to, or visit with, the managing editor, 218 UPB (Ext. 4707).

University Publications. A complete University Publications service facilitates the production of all sizes and types of publications required for the functioning of University programs.

Qualified communications consultants are available to assist in creative planning, development of publications programs, scheduling, writing, editing, design and illustration, printing, promotion and sales where needed, packaging, and mailing.

Mail Service. The University Mail Service includes the operation of a U.S. Postal Service contract station in the Wilkinson Center, the distribution of campus mail, and the handling of bulk mail.

Food Services

As a convenience to students and faculty members, the University provides food services at very reasonable prices through several different operations: cafeterias, snack bars, vending machines, concessions, catering, a dairy products outlet, and a bakery.

Residence hall cafeterias located at Deseret Towers and Helaman Halls provide regular meal service for both residents and students living off campus who purchase meal tickets. A snack bar and cafeteria are located in the Wilkinson Center, where meals may be purchased with cash or with reduced-rate scrip books. Excellent food is available in the Skyroom on the sixth floor of the Wilkinson Center from 11:30 a.m. to 2:00 p.m. Monday through Friday.

Snack bars at Deseret Towers, Helaman Halls, and the Wilkinson Center provide food throughout the day. Vending machines are located at various places on campus.

In addition, the University operates a dairy products laboratory where milk, ice cream, cheese, and other products may be obtained. This facility is also an outlet for products from the bakery.

Security/Police and Traffic

The Security/Police is a protective agency established for the benefit of students, faculty, and staff. It maintains effective liaison with the local police department and is entrusted with the proper enforcement of campus rules and regulations. All matters concerning security or requiring police action should be referred to this office, B-66 ASB, by calling Ext. 2751.

Another major responsibility of this office is the control of campus traffic and parking. Any vehicle maintained, owned, or operated by a BYU student or employee must be registered with the Traffic Office if it is driven or parked on any part of the BYU campus. Failure to register such a vehicle within two days after a student enters BYU or an employee commences work at BYU is a traffic violation for which citations will be issued.

The presence of any vehicle on the BYU campus without evidence of registration including a valid parking decal is conclusive evidence of violation of this provision unless the owner or driver can prove that he or she entered BYU or became employed less than two days prior to the citation date.

The Security/Police offers many other services to students and staff members, including the taking of fingerprints necessary for teaching certificates, government jobs, and ROTC between the hours of 10:00 a.m. and 12:00 noon Monday through Friday.

Automobile Registration

To obtain a parking or registration permit the following must be presented at the Traffic Office, B-69 ASB:

1. License plate number
2. The appropriate fee (no fee for registration only)
3. The name of the insurance company with which the automobile is insured

Traffic Regulations

Students who are residents of Utah or of a state other than these listed below must have a Utah license if they want to drive in Utah. The following states have entered into a compact, and a license from any of them is good in all others:

Alabama
Arizona
Arkansas
California
Colorado
Delaware
Florida
Hawaii
Idaho
Illinois
Indiana
Iowa
Kansas
Louisiana
Maine
Mississippi
Montana
Nebraska
Nevada
New Jersey
New Mexico
New York
Oklahoma
Oregon
Tennessee
Utah
Virginia
Washington
West Virginia

The "Traffic Rules and Parking Regulations" pamphlet may be obtained at no charge from the Traffic Office, located in the Abraham O. Smoot Administration and General Services Building, B-69, Ext. 3906. All students and faculty/staff members will be responsible for the information contained therein.

Brigham Young University maintains a zoned parking system. Upper-class permits—for juniors, seniors, and graduate students—are $20.00. Freshman-sophomore permits—available to all students—are $2.00 for the academic year. Housing permits—for those in on-campus housing—are $2.00 for the academic year. The required registration is free but allows no campus parking until after 4:00 p.m. in student lots only.

Nonresident

Students from out of state who do not have Utah license plates on their cars may obtain a nonresident permit for their vehicles as long as their main purpose for being in Provo is education. Full-time employees of the University or students whose spouses are full-time employees do not qualify; they must purchase Utah plates and pay Utah property taxes on their vehicles. Either a nonresident permit or Utah license plates must be obtained immediately upon registration at the University. To obtain a nonresident permit the student must present the following at the Information Booth located across the street from Helaman Halls at 150 East 1230 North:

1. Home-state vehicle registration certificate
2. Proof of current safety inspection from Utah or home state
3. Fifty cents
4. BYU full-time activity card

Religious Instruction

Ellis T. Rasmussen, Dean (144 JSB)

The following departments are in Religious Instruction:

Ancient Scripture
Church History and Doctrine

Religious Instruction administers all religious instruction sponsored by the University. More than a score of undergraduate courses are offered, but no bachelor's degree is available.

It has always been the view of The Church of Jesus Christ of Latter-day Saints that education is incomplete without a proper integration of secular, moral, and religious knowledge and values. From its beginning, therefore, Brigham Young University, firm in the belief that no life is full and complete unless established upon a sound ethical and religious basis, has offered courses in religion.

At BYU undergraduates study religion simultaneously with other academic subjects by taking a course in religion each semester they are in residence, rather than by accumulating excessive religion credit in one semester in order to be excused in another semester. For detailed information about the religion requirements, see the general education program sections of this catalog.

Graduate Studies in Religion. Religious Instruction has no majors at either the master's or doctoral level. There are, however, graduate minors available at both levels. Details precede the list of courses in both departments.

Religious Studies Center

The dean of Religious Instruction is also the director of the Religious Studies Center, which promotes research in the following areas with a director for each as indicated: Ancient Studies, S. Kent Brown; Church History, LaMar C. Berrett; Judeo-Christian Studies, Truman G. Madsen; Scripture, Paul R. Cheesman; World Religions, Spencer J. Palmer.

The center is also intended to be a supporting and coordinating agency for religion-oriented research throughout the University. Concentrating on research, writing, and other scholarly activities, it is not involved in classroom instruction nor degree programs. The center provides a base of operations for the Richard L. Evans Chair of Christian Understanding.

The Richard L. Evans Chair of Christian Understanding

Truman G. Madsen, Professor of Philosophy (165 JSB)

The occupant of the Richard L. Evans Chair of Christian Understanding is responsible for promoting understanding among people of different religious faiths through teaching and other activities centered in Jesus Christ and his teachings. This responsibility involves articulating to a broad audience the Christ-centered values to which Elder Evans dedicated his life, and promoting an enlightening exchange among Latter-day Saints, members of other faiths, and people of good will everywhere.

Schools

Graduate School of Management

The Graduate School of Management offers degrees in the following graduate professional programs:

Master of Business Administration
Master of Public Administration
Master of Accountancy
Master of Organizational Behavior

Information regarding these programs, admission standards, and related matters may be obtained from the *Graduate School of Management Bulletin*, which is available through the office of the Dean of the Graduate School of Management, 154 JKB, Brigham Young University, Provo, Utah 84602.

To be admitted to the Graduate School of Management, the applicant must meet the high academic and admission standards established by each of the programs. In addition, an applicant must meet the general requirements for admission to the University, including the personal standards required of all students.

Application for admission must be made on forms provided by the Graduate School of Management. A flexible admission policy is used, and qualified applicants will be accepted as long as places are available.

Law School

The J. Reuben Clark Law School offers a six-semester course of graduate professional study leading to the Juris Doctor (J.D.) degree. Information regarding the program of legal education, admissions standards, and related matters may be obtained from the *Law School Bulletin*, which is available through the admissions office of the Law School.

To be admitted to the Law School, a student must be a college graduate who has excelled academically and has scored in the upper range of the nationally administered Law School Admission Test. In addition, an applicant must meet the general requirements for admission to the University, including compliance with the personal standards required of all students.

Application for admission must be made on forms provided by the Law School, which must be filed prior to March 15 preceding the fall in which a student expects to enroll in the Law School. Enrollment takes place only in the fall of each year.

For information regarding prelegal education, consult the section of this catalog entitled Preprofessional Programs—Law.

School of Library and Information Sciences

Master of Library Science Program

The School of Library and Information Sciences offers a 38-credit-hour program leading to the Master of Library Science degree. Its basic goal is the education of individuals to use their abilities creatively and innovatively in librarianship with efficiency and maximal comprehension in all types of libraries, learning resource centers, information centers, and instructional media centers. The program emphasizes problem awareness and serious intellectual inquiry rooted on a foundation of understanding of the basic concepts of collection development, organization of materials, public services, and their integration.

Objectives supportive of that goal include the following:

1. Attaining knowledge and skills, required by most librarians, necessary to acquire, organize, maintain, use and properly interpret library materials.
2. Developing an adaptive pattern of continuing education in order to retain a viable, wholesome, professional attitude.
3. Developing an attitude of problem awareness and serious critical inquiry based upon sound policies of research.
4. Acquiring an understanding of libraries' organizational systems and an understanding of planning, decision making, and modern management theory and skills.
5. Achieving capabilities for becoming change agents both within the working environment and the field at large.
6. Becoming knowledgeable regarding the use of interactive time-sharing bibliographic search services and other computer applications to libraries.
7. Acquiring attitudes emphasizing participation in professional organizations.
8. Developing the ability to cope with volatile issues such as censorship, freedom of the press, rights of privacy, intellectual freedom, etc.

The curriculum normally consists of 24 hours of required courses, which include the basic courses and completion of a research project, and 14 hours of elective courses through which the student can specialize. Courses offered by departments of instruction outside the school that are appropriate to the student's goals may be taken for elective credit with faculty approval.

Acceptance into the school is through the Graduate School and requires meeting Graduate School requirements. A bachelor's degree in an academic program is the normal preparation and is preferable to an undergraduate program in library science or one which emphasizes manual skills.

The school has a limited number of financial aid opportunities that can be awarded to gifted and needy students. One teaching assistantship, four internships, and five supplementary awards are currently available. In addition, many students find part-time positions in the library.

Library Technician Program

The school also administers a two-year undergraduate program for training library technicians as library support staff. Graduates receive the Associate of Science degree (library technician).

Graduate School

Chauncey C. Riddle, Assistant Academic Vice-President
Robert W. Laird, Assistant Dean

Preparation for Graduate Study

Wise undergraduates who intend to pursue a graduate degree will prepare themselves in the following areas:

1. **Writing Ability.** Since the ability to write clearly and correctly is of paramount importance to the graduate student, every undergraduate should seek to develop ready facility and confidence in the use of English.
2. **Foreign Languages.** Any foreign language important to a student's particular discipline should be mastered as early as possible. Mastery, not just a minimal reading ability, should be sought.
3. **Mathematics, Statistics, and Computer Science.** Serious students will achieve skill in these areas appropriate to the natures of their particular disciplines.
4. **Scholarly Skills.** Students should thoroughly understand the organization of the library and should be proficient in evaluating sources, in documenting ideas, in preparing bibliographies, and in writing in the scholarly format of their area or speciality.
5. **Scientific Research.** Any student who participates in or who must speak intelligently about science should gain an understanding of the intellectual nature of science; that is, the essence of scientific experimentation, the nature and uses of hypotheses, controls, etc.
6. **Research Experience and Publication.** Practical experience in scholarly and/or scientific research procedures under the close supervision of a skilled researcher is very useful to prospective graduate students. Also, at least one publication resulting from such experience would be most valuable.
7. **Becoming Known.** In honorable and unobtrusive ways, students should become well known to faculty members from whom they will want letters of recommendation. Unusual originality, insight, and energy are very impressive, discipline being the key.
8. **Knowing Your Field and Defining Your Interests.** Students should know the leading world figures in their particular field, the leading current issues, and the publications which keep one abreast of progress. Students should also have their own interests well mapped. They should know where, precisely what, and under whom they wish to study on the graduate level, and why. They should have clear and realistic professional goals.

Graduate Degrees

Doctor of Philosophy

- Botany and Range Science
  - Botany
  - Genetics
  - Wildlife and Range Resources
- Business Education
  - Business Education
- Chemistry
  - Analytical Chemistry
  - Biochemistry
  - Inorganic Chemistry
  - Organic Chemistry
  - Physical Chemistry
- Child Development and Family Relationships
  - Child Development and Family Relationships
  - Family Studies (interdepartmental)
  - Marriage and Family Counseling
- Educational Psychology
  - Counseling and Guidance
  - Educational Psychology
  - Special Education
- Engineering
  - Chemical Engineering
  - Civil Engineering
  - Electrical Engineering
  - Mechanical Engineering
- Geology
  - Economic Geology
  - Mineralogy, Geochemistry, and Petrology
  - Paleontology
  - Stratigraphy and Sedimentation
  - Structural and Field Geology
- History
  - American History
  - Ancient History
  - History of Asia
  - Latin American History
  - Medieval History
  - Modern European History
- Instructional Science
  - Instructional Psychology (interdepartmental)
  - Instructional Science and Technology
- Microbiology
  - Genetics
  - Microbiology
- Music
  - Music
- Physical Education
  - Biomechanics
  - Exercise Physiology
  - Corrective Physical Education and Rehabilitation
- Physics and Astronomy
  - Acoustics
  - Astrophysics
  - Atomic Physics and Spectroscopy
  - Biophysics
  - Nuclear Physics
  - Planetary and Space Physics
  - Plasma Physics
  - Solid-State Physics
  - Theoretical Physics
- Psychology
  - Clinical Psychology
  - Experimental Psychology
  - Instructional Psychology (interdepartmental)
  - Social Psychology
- Sociology
  - Family Sociology
  - Family Studies (interdepartmental)
  - Social Organization
  - Social Psychology
- Theatre and Cinematic Arts
  - Theatre and Cinematic Arts
- Zoology
  - Entomology
  - Genetics
  - Wildlife and Range Resources
  - Zoology

Doctor of Education

- Educational Administration
  - Community Education Administration
  - Educational Administration
  - Higher Education Administration
  - Public School Administration
- Educational Psychology
  - Counseling and Guidance
  - Educational Psychology
  - Special Education
- Elementary Education
  - Elementary Curriculum and Instruction
- Instructional Science
  - Instructional Design and Production
  - Instructional Evaluation
  - Instructional Systems Management
- Physical Education
  - Analysis of Human Motions
  - Elementary School Physical Education
  - Professional Leadership
- Secondary Education and Foundations
  - Secondary Curriculum and Instruction

Educational Specialist Degree

- Educational Administration
  - Community Education Administration
  - Public School Administration
  - Supervision in Educational Administration
- Educational Psychology
  - Counseling and Guidance
  - Special Education
- Elementary Education
  - Elementary Curriculum and Instruction
  - Reading Specialist
- Instructional Science
  - Instructional Design and Production
  - Instructional Systems Management
- Secondary Education and Foundations
  - Secondary Curriculum and Instruction

Master of Arts

- Anthropology and Archaeology
  - Historic Archaeology
  - Prehistoric Archaeology
- Art and Design
  - Design
  - Painting and Sculpture
- Chemistry
  - Chemistry Teaching
- Communications
  - Communications
- Educational Psychology
  - Clinical Audiology
  - Communicative Disorders
  - Counseling and Guidance
  - Educational Psychology
  - School Psychology (interdepartmental)
  - Special Education
- Elementary Education
  - Elementary Curriculum and Instruction
  - Reading Specialist
- English
  - American Literature
  - English Language
  - English Literature
- French and Italian
  - French Literature
  - French Teaching
- Geology
  - Earth Science Teaching
- Germanic Languages
  - German Language
  - German Literature
  - German Teaching
- Government
  - Political Science
- History
  - American History
  - Ancient History
  - History of Asia
  - History Teaching
  - Latin American History

  - Medieval History
  - Modern European History
- Humanities, Classics, and Comparative Literature
  - Classics
  - Comparative Literature
  - Humanities
- Latin American Studies
  - Latin American Studies
- Linguistics
  - Applied Linguistics
  - Teaching English as a Second Language (TESL)
  - Theoretical Linguistics
- Mathematics
  - Mathematics
  - Mathematics Education
- Music
  - Music Education
  - Musicology
  - Music Theory/Composition
- Physical Education
  - Dance
  - Professional Leadership
- Physics and Astronomy
  - Physics Teaching
- Recreation Education
  - Community School Leadership
  - Municipal Recreation Administration
  - Outdoor Recreation
  - Therapeutic Recreation
- Spanish and Portuguese
  - Portuguese Language
  - Portuguese Literature
  - Spanish Language
  - Spanish Literature
  - Spanish Teaching
- Theatre and Cinematic Arts
  - Theatre and Cinematic Arts
- World Affairs
  - Asian Studies
  - European Studies
  - International Relations

Master of Science

- Agricultural Economics
  - Agribusiness
- Agronomy and Horticulture
  - Agronomy
  - Horticulture
- Animal Science
  - Animal Science
- Botany and Range Science
  - Biological Science Education
  - Botany
  - Genetics
  - Wildlife and Range Resources
- Business Education
  - Business Education
- Chemical Engineering
  - Chemical Engineering
  - Combustion
  - Environmental Control
  - Fluid Mechanics
  - Nuclear Engineering
  - Thermodynamics
- Chemistry
  - Analytical Chemistry
  - Biochemistry
  - Inorganic Chemistry
  - Organic Chemistry
  - Physical Chemistry
- Child Development and Family Relationships
  - Child Development
  - Family Relationships
  - Marriage and Family Counseling
- Civil Engineering
  - Geotechnical Engineering
  - Structures and Structural Mechanics
  - Transportation Engineering
  - Water Resources and Environmental Engineering
- Computer Science
  - Computer Science
- Economics
  - Economics
- Electrical Engineering
  - Communications Engineering
  - Computer Engineering
  - Electrical Power Engineering
  - Solid-State Electronics
- Food Science and Nutrition
  - Food Science and Nutrition
- Geography
  - Cartography
  - Geography
  - Planning
- Geology
  - Economic Geology
  - Mineralogy, Geochemistry, and Petrology
  - Paleontology
  - Stratigraphy and Sedimentation
  - Structural and Field Geology
- Health Sciences
  - Community Health
  - Health Education (with emphasis in school health)
  - Safety Education
- Home Economics Education
  - Home Economics Education
- Industrial Education
  - Industrial Arts Education
  - Technical Education
  - Technology
- Instructional Science
  - Instructional Psychology (interdepartmental with psychology)
- Mathematics
  - Mathematics
- Mechanical Engineering
  - Applied Mechanics
  - Machine Design
  - Nuclear Engineering
  - Thermosciences
- Microbiology
  - Genetics
  - Medical Technology
  - Microbiology
- Physical Education
  - Analysis of Human Motions
  - Professional Leadership
- Physics and Astronomy
  - Acoustics
  - Astrophysics
  - Atomic Physics and Spectroscopy
  - Biophysics
  - Nuclear Physics
  - Planetary and Space Physics
  - Plasma Physics
  - Solid-State Physics
  - Theoretical Physics
- Psychology
  - School Psychology (interdepartmental)
- Sociology
  - Sociology
- Statistics
  - Applied Statistics
  - Theoretical Studies
- Technology
  - Computer-aided Manufacturing
- Zoology
  - Biological Science Education
  - Entomology
  - Genetics
  - Wildlife and Range Resources
  - Zoology

Master of Communicative Disorders

- Educational Psychology
  - Communicative Disorders

Master of Education

- Educational Administration
  - Community Education Administration
  - Elementary School Administration
  - Secondary School Administration

Educational Psychology
  Counseling and Guidance
  Educational Psychology
  School Psychology (interdepartmental)
  Special Education
Elementary Education
  Elementary Curriculum and Instruction
  Reading Specialist
Instructional Science
  Instructional Media
  Instructional Science and Technology
Secondary Education and Foundations
  Comparative and International Education
  Secondary Curriculum and Instruction

Master of Fine Arts

Art and Design
  Design
  Painting and Sculpture

Master of Engineering

Chemical Engineering
  Combustion
  Environmental Control
  Fluid Mechanics
  Nuclear Engineering
  Process Engineering
  Thermodynamics
Civil Engineering
  Geotechnical Engineering
  Structures and Structural Mechanics
  Transportation Engineering
  Water Resources and Environmental Engineering
Electrical Engineering
  Communications Engineering
  Computer Engineering
  Electrical Power Engineering
  Solid-State Electronics
Mechanical Engineering
  Applied Mechanics
  Machine Design
  Nuclear Engineering
  Thermosciences

Master of Health Education

Health Sciences
  Community Health
  Health Education (with emphasis in school health)
  Safety Education

Master of Industrial Education

Industrial Education
  Industrial Education

Master of Library Science

School of Library and Information Sciences
  Library Science

Master of Music

Music
  Music Performance

Master of Nursing

Nursing
  Clinical Specialization in
    Cardiovascular Nursing
    Family Nursing
    Neurological Nursing
    Oncological Nursing

Master of Recreation Education

Recreation Education
  Community School Leadership
  Municipal Recreation Administration
  Outdoor Recreation
  Therapeutic Recreation

Graduate Minors are offered in the fields listed above in addition to the following fields:
  Ancient Scripture
  Art History
  Business Management
  Chemistry
  Church History and Doctrine
  Philosophy

Certificate Program

Teaching English as a Second Language (TESL).
  Linguistics (with emphasis in French, German, Portuguese, or Spanish)

Interdepartmental Programs

The Graduate School is authorized to allow a limited number of superior students to pursue special graduate programs which do not fall into traditional departmental degree programs. If the expertise and classwork already exist on the campus, students may propose such special programs to the Graduate Council. For further information, please contact the Graduate School Office (B-336 ASB).

General Regulations

It is the responsibility of students in the Graduate School to know and conform both to the following general regulations and to the additional requirements of their department. These general regulations may change from year to year. Students should consult the BYU General Catalog each year to be aware of current regulations.

University Standards

The maintenance of high standards of honor, integrity, and morality; of graciousness in personal behavior; of Christian ideals in everyday living; and the complete abstinence from alcohol and tobacco are required of all students while on the campus, at home, or wherever they may be as long as they are in student status. Registration signifies a student's willingness to conform to these standards. A copy of the Dress and Grooming Standards and the BYU Code of Honor may be found in the introductory section of this catalog.

Any pronouncement of disciplinary measures made by the President of the University becomes a part of these regulations. Violations of these regulations make the offender liable to suspension from the University.

Admission

Admission to the Graduate School is contingent upon the completion of the bachelor's degree or its equivalent from an accredited institution.

Brigham Young University does not discriminate on the basis of race, color, creed, sex, or ethnic or national origin. Qualified handicapped students are also admitted. All students are accepted for admission to Brigham Young University provided they meet the University's academic requirements and their personal behavior conforms to the standards of The Church of Jesus Christ of Latter-day Saints.

Application forms for admission may be obtained by a written request to University Admissions Office, A-153 ASB. Be sure to specify whether you desire a degree or a nondegree application.

A grade-point average of 3.0 is the minimum acceptable for regular degree-seeking status. Students with undergraduate grade-point averages of less than 2.5 are not eligible for admission on either degree-seeking or nondegree status.

Students must be registered for a minimum of two credits the semester/term of acceptance.

In addition to academic qualifications, every student who is not a U.S. citizen must—

1. submit test scores showing evidence of English proficiency (for bilingual only),
2. submit the General Information Confidential Statement of Finances Form to the University Admissions Office prior to being accepted. Forms can be obtained from the University Admissions Office, A-153 ASB, Brigham Young University, Provo, Utah 84602, and
3. register for a minimum of 9 credit hours each semester.

International students should keep in close contact with the International Student Office while they are on the BYU campus.

Admission to the Graduate School is contingent upon acceptance in a particular department and program as a degree-seeking student. To be considered, applications must include each of the following items and be filed before the announced deadlines:

1. Fully completed application form
2. Nonrefundable application fee of $25.00
3. Two official transcripts of all college work
4. Three letters of recommendation on the forms provided
5. Confidential interview form
6. Letter of intent

Students are responsible for making sure their application is completed (including the confidential report and all letters of recommendation) and in the University Admissions Office, A-153 ASB, by the appropriate deadline.

Applicants are notified in writing by the Graduate School Office concerning their admission or nonadmission. Application deadlines are as follows (Some departments have other deadlines which supercede the Graduate School deadlines. Please see departmental information):

Deadlines for Graduate School Applications

1978-79	Degree	Nondegree	International Student
Winter Semester	15 October	30 November	31 August
Spring Term	20 February	7 April	31 December
Summer Term	15 April	30 May	28 February
Fall Semester	15 June	1 July	30 April

Student Classification

Degree-seeking Status

1. Regular. Students who have met all prerequisites and are fully accepted by the academic department as ready to proceed with a regular graduate program in that department are placed on **regular** status.

2. Provisional. Students who lack prerequisites, language or tool preparation, or who have low grade-point records are placed on **provisional** status. Notice of provisions to be fulfilled is sent to the student with the acceptance form. Fulfillment of provisions as stipulated by the academic department automatically advances the student to regular status.

Nondegree Status

A baccalaureate degree and a 3.0 grade-point average are prerequisite to nondegree registration. Registration of students on a nondegree basis is permitted for teacher certification and for taking classes of personal interest to the student. All auditors must be formally admitted and registered.

Credit acquired at Brigham Young University while on a nondegree status or transfer credit from another accredited graduate school is not automatically a part of a degree program. Up to 10 semester hours of this credit may be included as part of a degree program if the student's advisory committee judges these hours to be acceptable.

Academic Sponsor

All students accepted on a degree-seeking basis are assigned an academic sponsor (who is designated on the acceptance form). Students are expected to make immediate contact with their sponsor, stay in contact, and meet with the sponsor at least weekly during periods of regular enrollment. The sponsor's commission is to guide students in their registration and individual study until such time as they are ready to proceed under the auspices of an advisory committee. This transition should take place during the first semester of registration.

Advisory Committee

The department chairman will appoint an advisory committee consisting of at least two persons for master's committees and three for educational specialists and doctoral committees. Minor fields must be represented by a member of the advisory committee. The advisory committee is to direct students through those experiences which will enable them to satisfy all requirements and examinations pertinent to their degree program.

Student Programs

Immediately after the formation of the advisory committee and during the first semester of registration, students should prepare and file their study list (Form 3) in the Graduate School Office. This outline should reflect all prerequisites taken on provisional status, all tool subjects required, thesis credit, and all regular courses to be taken. This study list must be completed under the direction of the advisory committee and signed by them.

When there is a needed change in the student's program or committee, the change must be requested on official forms provided by the Graduate School Office to each department (Form 3b) and be approved by the student's advisory committee and the department chairman or graduate coordinator. The forms must then be forwarded to the Graduate School Office.

As soon as possible after the formation of the advisory committee, the student should file an approved thesis or dissertation prospectus (Form 4) with the Graduate School Office. Project prospectuses are filed only when required by the department.

Credits Certified by Special Examination

Under certain circumstances, graduate students who are working in degree programs at BYU may need to have certain of their credits certified by special examination. It is the policy of the Graduate School that students must pay for these examinations. Payment (nonrefundable) must be made in advance in an amount equivalent to ordinary registration fees for the amount of credit concerned. This arrangement applies specifically to the following situations:

1. Graduate credit taken at BYU, or another accredited university in the United States or Canada, which has become outdated under the time limit regulation.
2. Graduate credit which a student desires to transfer from a nonaccredited institution or from a foreign university.
3. Challenge of credit on the study list for students who may already have a good background in a required subject.

Applications for these special examinations can be obtained in the Graduate School Office.

Time Limits

Graduate credits are applicable toward a master's degree only within a five-year period from the time they are received.

All academic credit applicable toward the Educational Specialist degree, excluding credit applying toward a master's degree, must be completed within a period not to exceed six years.

All academic credit applying toward the doctor's degree, exclusive of that earned in completion of the master's degree, must be completed within a period not to exceed eight years.

Student Load

Graduate students are free to register for the number of hours they can complete during a given term. To safeguard this freedom a **nonrefundable** overload fee is charged for registration in excess of 16 hours per semester or 8 hours per term. Graduate assistants must be registered for a minimum of 6 hours per semester or 3 hours per term. Graduate interns must be registered for a minimum of 8½ hours per semester or 4½ hours per term.

Continuous Registration

Details of the registration and records procedures are outlined in the Class Schedule issued each semester by the University Office of Admissions and Records.

When students are admitted to a degree program, it is expected that they will work continuously and will register in that program until all requirements are completed. Normally students will register each semester for a minimum of 2 semester hours of credit in work which is filed on their study list as part of their approved graduate program. Each student must, in any case, meet the following minimum requirements:

1. Complete at least 6 semester hours of approved program credit during each academic year (September 1 to August 20) or pay an equivalent continuous registration fee (accepted in lieu of credit only upon written recommendation of the major department).
2. Register for at least 2 semester hours of approved program credit during any semester or during the Spring and Summer Terms in which University personnel are consulted or facilities are used.

If a student is deleted for failure to meet the continuous registration requirement, no more than 10 semester hours of credit previously acquired may be applied toward a new degree program if the student reapplies.

Every international student must register for a minimum of 9 hours **each** semester.

Students are considered to have voluntarily withdrawn if they do not meet the continuous registration requirements.

Special Registration. Off-campus students who are not able to use the regular registration procedures of the University may register for thesis or dissertation credit, in the Graduate School Office after the third week and before the twelfth week of each semester.

Transfer and Nondegree Credit

Transfer credit (graduate credit only, from another accredited university) and/or nondegree credit, acceptable to a student's advisory committee and not in excess of a total of 10 semester hours, may be applied toward a graduate degree at BYU. Forms for petitioning for such transfers (Form 3b) are available in the major department if the study list is already on file in the Graduate School Office. All transferred credit must be of grade B or better. At least 20 semester hours toward the master's degree must be taken on the Provo campus in all programs except education and industrial education. Transfer credit from foreign universities must be certified by examination. For further information see the Credits Certified by Special Examination section.

Neither lower-division nor correspondence credit can be applied toward a graduate degree.

Scholastic Records

A grade-point average of 3.0 for all credit applying toward the degree is required of any student earning a degree in the Graduate School. No D credit may apply toward a graduate degree. If the program grade-point average falls below 3.0 in two or more semesters, a graduate may be subject to suspension.

Suspension. Graduate students are suspended when there is no reasonable prospect of their being able to complete degree requirements. Suspended students may appeal for reinstatement under certain conditions.

Deadlines for 1978-79 Graduations

December **April** **August**
November 27 March 9 July 6
1. Last date for a student in a thesis, project*, or dissertation program to submit copies of the thesis in final form (for the orals committee) to the department chairman.
2. Last date for a student in a thesis, project*, or dissertation program to submit Forms 6a and 6b and a BYU transcript to the department chairman. (Forms 6a and 6b must be in the Graduate School Office one working day after this deadline.)

December 1 March 16 July 13
Last date for a student in a nonthesis program to submit Forms 6a and 6b and a BYU transcript to the department chairman. (Forms 6a and 6b must be in the Graduate School Office one working day after this deadline.)

December 15 March 23 July 20
Last day for deposition of final copies of a thesis, project*, or dissertation in the Graduate School Office.

December 21 March 30 July 27
All requirements must be complete, including the make-up of incompletes, payment of fees, and submission of Form 10 (or Form 5b for written examinations) to the Graduate School Office.

None April 20 August 17
Commencement and Convocation Exercises

Please Note:

1. Forms 6a and 6b must be in the Graduate School Office two weeks before the scheduled exam or by the above listed deadlines, whichever comes first.
2. Ample time should be allowed to make corrections in theses, projects, and dissertations after the final oral examination and before the deadline for deposition of final copies.
3. Theses, dissertations, and projects* submitted on deadline dates must be problem-free to guarantee clearance for graduation. For the week after thesis deadlines, final checks take precedence over preliminary checks.

*Projects from Art, Industrial Education, Music, Nursing, Theatre and Cinematic Arts, and Zoology

Instructions for Graduation Clearance

Master's Degree Thesis Programs and All Doctoral Programs

1. Forms 6a, Application for Final Examination, and 6b, Information for Graduation, should be obtained from the department secretary.
2. All course work on the approved study list must be registered for before Form 6a is submitted.
3. The student obtains approval of the thesis (or dissertation) from his or her advisory committee. The committee members sign Form 6a, signifying their judgment that the student is ready for the final oral examination.
   Special Note: A brochure entitled "The Preparation of Theses and Dissertations," stating policies and procedures governing theses and dissertations and manuscript style, is available in the Graduate School Office. Great care should be used to meet the stipulations in this brochure to avoid the necessity of revising the final copies. The dissertation secretary will give advice and make preliminary checks on format upon request.
4. Form 6a, signed by the advisory committee; the completed Form 6b; a current BYU transcript; and at least three copies of the thesis are submitted to the department chairman or graduate coordinator.
5. The department chairman assigns the final oral examination committee, appoints its chairman, sets the time and place of the examination, and distributes the copies of the thesis. He or she adds the information concerning the oral examination to Form 6a and signs it.
6. Forms 6a and 6b and a current BYU transcript are submitted to the Graduate School Office by the department chairman at least one week prior to the time of the oral examination. All uncleared problems are noted and the signature of the assistant graduate dean is obtained. (If major problems are encountered that would make it inadvisable to proceed with the examination, the department chairman would be consulted.)
   Oral examinations may not be administered during any period in which the University is not in regular session.
7. Approved copies of Forms 6a, 9, and 10 are conveyed to the department chairman. Receipt of these forms is the signal that the final oral or written ex-

amination is official and may proceed.

8. When the final oral examination has been completed, the results are indicated on Forms 9 and 10. The original of the completed Form 10 is sent to the Graduate School Office.
9. Each student must be registered for at least 2 hours of approved program credit or pay an equivalent continuous registration fee during the semester of final examination. Fee slips for payment of continuous registration, binding the thesis, and graduation ($20.00) may be obtained in the Graduate School Office.
10. When all corrections are made and the thesis is perfected, four copies of the approved thesis in its **final** form and the fee receipt are deposited with the dissertation secretary in the Graduate School Office. Extra copies will be bound on request.
11. When all problems are cleared (including approval of the thesis format and typing), the student is cleared for graduation.

    A letter of completion is available upon request. Notation of the degree on the official transcript will be made within one month after commencement. The diploma will be mailed from eight to twelve weeks following commencement.

Master's Degree Nonthesis Programs

1. Forms 6a and 6b should be obtained from the department secretary.
2. All course work on the approved study list must be registered for before Form 6a is submitted.
3. Form 6a, signed by the advisory committee; the completed Form 6b; and a current BYU transcript are submitted to the department chairman or graduate coordinator.
4. The department chairman assigns the final oral examination committee, appoints its chairman, and sets the time and place of the examination. He or she adds the information concerning the oral examination to Form 6a and signs it.
5. Forms 6a and 6b and a current BYU transcript are submitted to the Graduate School Office by the department chairman at least one week prior to the time of the oral examination. All uncleared problems are noted and the signature of the assistant graduate dean is obtained. (If major problems are encountered that would make it inadvisable to proceed with the examination, the department chairman would be consulted.
6. Approved copies of Forms 6a, 9, and 10 (or Form 5b, Evaluation of Examination, for written exams) are conveyed to the department chairman. Receipt of these forms is the signal that the final oral or written examination is official and may proceed.
7. When the final oral examination has been completed, the results are indicated on Forms 9 and 10. The original of the completed Form 10 is sent to the Graduate School Office.

    The results of the final written examination are indicated on Form 5b, which is signed by the chairman of the examining committee. The white copy is sent to the Graduate School Office.
8. Each student must be registered for at least 2 hours of approved program credit or pay an equivalent continuous registration fee during the semester of final examination. Fee slips for payment of the continuous registration fee and the graduation fee ($20.00) may be obtained in the Graduate School Office.
9. When all problems are cleared, the student is cleared for graduation. A letter of completion is available upon request. Notation of the degree on the official transcript will be made within one month after commencement. The diploma will be mailed from eight to twelve weeks following commencement.

Graduate Awards

Teaching and research experience are seen as integral and indispensable parts of graduate student programs. For this reason, graduate awards given by Brigham Young University are in the form of teaching and research assistantships and internships. These awards are administered through the academic departments of the Graduate School and vary according to the requirements and opportunities of the different disciplines. The most remunerative of these awards totals $5500 per academic year. **Application for these awards should be made through the chairman of the academic department.**

The three basic types of financial assistance available are:

Internships. Professional internships with outstanding professors ranging from one-fourth to one-half time are available in most departments. Students on this award must:

1. Be a degree-seeking graduate student.
2. Register during the regular registration period.
3. Register for at least 9 hours per semester or 4½ hours per term.
4. Have and maintain a 3.5 GPA minimum (entering or cumulative program GPA).

Assistantships. Teaching and research assistantships are available in most departments.

Supplementary Awards. These grants may be used only for payment of fees. The recipient must:

1. Be a degree-seeking graduate student.
2. Register during the regular registration period.
3. Register for at least 6 hours per semester or 3 hours per term.
4. Have and maintain a 3.5 GPA minimum (entering or cumulative program GPA).

Student Loans and Financial Aids

Limited funds are available to help students remain in school when financial emergencies have arisen and personal or family resources are not available.

Short-Term Loans

Short-term loans are available for emergency assistance for tuition, books, fees, and other school expenses to full-time day students. These loans are made in small amounts for immediate requirements. Repayment is required within the current semester.

Church Student Loan Fund

The Church of Jesus Christ of Latter-day Saints makes aid available through a long-term loan program by which loans may be made to worthy full-time LDS students who are in critical financial need for tuition, books, fees, and other school expenses. Loans may be made each year in amounts usually not in excess of $800 for graduate students. Students may be permitted to delay repayment until after they discontinue their full-time status at BYU.

Application

Information regarding student loans and application forms for loans are available from the Student Financial Aids Office, A-41 ASB.

Master's Degree

Amount and Distribution of Credit

The master's degree requires a minimum of 30 semester hours of credit.

The master's thesis must carry a minimum of 6 hours, but no more than 6 hours of thesis credit may count toward the 30-hour minimum. The thesis credit shall include such disciplines as review of the literature, all thesis research, and the writing of the thesis. Registration for thesis credit (1-6 hours per semester as approved by the chairman of the advisory committee) and work on the thesis must be concurrent.

A graduate student may apply toward requirements for the master's degree a limited amount of credit earned by taking certain upper-division undergraduate courses at BYU which have been approved by the graduate advisory committee at the time of registration or appear on the study list of a degree-seeking student.

At least 20 hours of the credit for the master's degree must be in the 500 series or above.

Educational Specialist Degree

Admission Requirements

Students seeking admission to the educational specialist program must present evidence of a valid teaching credential, completion of at least two years of teaching or administrative experience, and a master's degree. The Graduate Record Examination (Aptitude and Advanced Test in Education) is prerequisite to admission as a regular degree-seeking student.

Academic and Residence Requirements

The Educational Specialist degree requires 60 semester hours of work beyond the baccalaureate degree. Programs are designed to meet the requirements of the Utah State Board of Education for state endorsements to the Professional Certificate. Twenty-four semester hours and three full-time registrations must be completed on the University campus. Advisory committees, appointed following the admission of the student to the program, will assist students in the preparation of a course of study.

Doctor of Education Degree

Admission Requirements

For admission to degree-seeking status as a doctoral applicant, the student must have completed 22 semester hours of education or possess certification as a teacher and must have completed two years of successful professional experience. Consult departmental announcements for specific requirements. Successful completion of a 3-hour seminar is prerequisite to admission on regular status.

Classification of Doctoral Students

Students seeking the Doctor of Education degree are classified as **degree applicants** and **degree candidates.** Students become doctoral applicants upon recommendation by their department chairman or graduate coordinator. The department will normally require an examination or other screening procedure prior to this recommendation. Students are admitted to candidacy after meeting conditions for admission to candidacy and before registering for the dissertation and internship.

Academic and Residence Requirements

The equivalent of a minimum of three years of full-time study beyond the bachelor's degree is required. Full-time study is defined as at least 9 hours in course work or the equivalent in research per semester. The advisory committee has authority to decide what work will be accepted to meet these requirements. At least two consecutive semesters (or two consecutive full-time summer sessions with an intervening supervised field experience of 5 semester hours for each of two semesters for members of an organized group), during each of which a student is registered for not less than 9 semester hours, must be taken on the Provo campus.

A minor must consist of at least 12 semester hours of approved credit.

Tool Requirement

There is no foreign language requirement. The student must demonstrate proficiency in statistics to the satisfaction of the advisory committee.

Comprehensive Examination

Students must pass a written comprehensive examination in their doctoral field under the direction of their major department. The minor department will be responsible for examining students in the minor area. This examination will normally be given at the end of the second year of graduate study. Departments may also require an oral portion of the comprehensive examination.

Admission to Candidacy

To be eligible for advancement to candidacy, students must satisfactorily pass the final qualifying written examination and submit a dissertation prospectus approved by their doctoral advisory committee. Students have the responsibility for filing with the Graduate School Office Form 5, Request for Admission to Candidacy, when all conditions for candidacy have been met. Notice from the Graduate School Office then admits the student to candidacy for the degree.

Dissertation

A minimum of 12 hours of dissertation credit must be attained. An oral examination on the student's dissertation must be completed successfully by each candidate.

Doctor of Philosophy Degree

Classification of Doctoral Students

Students admitted to the Doctor of Philosophy degree program are classified as **degree applicants** and **degree candidates.** Students become doctoral applicants upon recommendation by their department chairman or graduate coordinator. The department will normally require an examination or other screening procedure prior to this recommendation.

Academic and Residence Requirements

A full semester of residence credit is defined as at least 9 hours in course work or the equivalent in research per semester. The advisory committee has authority to decide what work will be accepted to meet these requirements. Ordinarily two years of full-time course work or research or its equivalent are to be taken on the Provo campus. At least two consecutive semesters of work, during each of which a student is registered for not less than 9 semester hours, must be taken on the Provo campus. These two semesters are in addition to any residence completed in a master's program.

A minor must consist of at least 12 semester hours of approved credit.

The doctoral degree is awarded to students when they have demonstrated their personal competence at an acceptable level in an appropriate field of endeavor. While successful passing of University course work contributes to students' development of this competence, such activities alone do not assure them of reaching an appropriate level. Therefore, no minimum number of formal course credit hours can be identified as guaranteeing competence at the doctoral level.

Normally, a minimum of six semesters of full-time study beyond the baccalaureate degree or four semesters of full-time study beyond the master's degree is required for the Ph.D. or Ed.D. degree. Attainment of skill in language or other tool subjects is independent of this minimum requirement.

The graduate student gains competence by means of many types of activity. Most of these involve services provided by the University, such as faculty time for guidance and evaluation, library resources, and office and laboratory spaces and facilities. It is therefore necessary that the student compensate the University for a part of this cost. While different programs involve various lengths of training, in no case will the doctorate degree be awarded until the student has paid to the University registration fees equivalent to six full-time semesters; or, if the student submits acceptable transfer graduate credit, registration fees will be reduced, but in all cases fees paid must be equivalent to a minimum of four semesters of full-time study.

Tool Requirement

For academic areas in which a significant body of subject matter related to the pursuance of the Ph.D. degree is published in languages other than English, it is expected that doctoral candidates will include foreign languages as a necessary prerequiste to study in their respective fields. Where justified by the subject matter of the major area, however, a tool subject replacement for foreign language may be made.

In any case, the foreign language or the tool subject requirement should be considered a prerequisite to regular status as a degree-seeking student and is not to be considered as part of regular course work for accumulating credit hours in the major or minor fields of study.

Any of the four options below will satisfy the language-tool subject requirements. Departments specify which requirement or requirements are appropriate for their respective areas as approved by the Graduate Council.

Tool Requirement 1: Single Language. The student shall be required to demonstrate a thorough familiarity with French, German, Russian, or Spanish. Fulfillment of this requirement will be manifest through examination that will demonstrate (1) the candidate's ability to translate literature in the field of specialization with a competent level of speed and accuracy and (2) the candidate's ability to communicate orally in the language with acceptable facility.

In lieu of a special examination that will demonstrate adequate use of the foreign language selected, this requirement can be met by the completion, with an average grade of B (3.0) or higher, of a minimum of 22 semester hours in the language. Students familiar with the language may be able to earn the first 16 of the total 22 semester hours' credit by special examination, thereby qualifying them to register for the remainder of the credit from courses 321, 415, and 416, or the equivalent.

In either case, competency must be certified by the language department involved.

Tool Requirement 2: Two Language. Any one or a combination of the following provisions meets the two-language requirement. One of the languages must be French, German, Russian, or Spanish. The second language may be one recommended by the department and authorized by the Graduate Council.

1. Successful completion of ETS examination (given only in French, German, Russian, or Spanish). Dates of and application for these examinations are made with the BYU Testing Service.
2. Successful completion of the language course 95R in either or both acceptable languages (offered only in French, German, or Spanish).
3. Successful completion of 16 semester hours of credit in the foreign languages that are approved by the major department and the Graduate Council for the degree program. An average grade of B (3.0) must be attained.

Tool Requirement 3: One Language and One Tool Subject. This requirement may be met by including one of the languages in Option 2 plus 8 to 10 credit hours in any combination from the Departments of Statistics, Computer Science, or Mathematics as approved for each department by the Graduate Council. Hours in mathematics would be beyond Math. 111.

Tool Requirement 4: Single Tool Subject. This option would normally consist of an integrated program of 18 to 21 semester hours of undergraduate studies in the Departments of Mathematics, Statistics, and Computer Science in any combination, as approved for each department by the Graduate Council, showing systematic tool development. Hours in mathematics would be beyond Math. 111.

Comprehensive Examination

Students must pass a written comprehensive examination in their doctoral field under the direction of their major department. The minor department will be responsible for examining students in the minor area. This examination will normally be given at the end of the second year of graduate study. Departments may also require an oral portion of the comprehensive examination.

Admission to Candidacy

Satisfactory completion of the tool requirement and the comprehensive examination and submission of a dissertation prospectus approved by an advisory committee are necessary for admission to candidacy for the Doctor of Philosophy degree.

The student has the responsibility of filing Form 5, Request for Admission to Candidacy, with the Graduate School Office when all conditions for admission to candidacy have been met.

Colleges

College of Biological and Agricultural Sciences

A. Lester Allen, Dean (301 WIDB)

The following departments are included within the College of Biological and Agricultural Sciences:

Biological Division	**Agricultural Division**
Botany and Range Science	Agricultural Economics
Microbiology	Agronomy and Horticulture
Zoology	Animal Science
	Range Science

Food Science and Nutrition*

*Students who major in food science and nutrition may register in either this college or the College of Family Living.

College Advisement Center

Audi Megerian, Supervisor (392-393 WIDB)

The college advisement center (CAC) is designed to help students with any academic need and to assist them to successfully progress from the day of orientation through graduation as smoothly as possible. Students are encouraged to freely use the academic services of the center.

Health Professions Advisement Office

Elda Banner, Adviser (391 WIDB)

The Health Professions Advisement Office serves students planning careers in health-related fields such as the following:

- biomedical engineering
- dental hygiene
- dentistry
- health administration
- medicine
- optometry
- osteopathic medicine
- pharmacy
- podiatry
- physician's assistant
- public health
- veterinary medicine

Catalogs and other materials pertinent to study for these professions are available in the office. The adviser will assist students in planning preprofessional study at Brigham Young University and in applying for admission to professional schools.

Students wishing to study medical dietetics, medical technology, nursing, or speech pathology and audiology may receive their full training at Brigham Young University. A description of these programs is given in the respective departments in this catalog. Consult the index for page numbers.

Division of Biological Sciences

Courses offered in these departments enable students to obtain a general understanding of the fundamental principles of plant and animal life, and the relationships of man to the world in which he lives. Specialized courses are offered in the several branches of biological science for those students who wish to major in one of these fields. Preparation for teaching and research is emphasized.

Students interested in health professions such as medicine, veterinary medicine, dentistry, dental hygiene, optometry, pharmacy, or in forestry may obtain their preprofessional training in the Division of Biological Sciences.

Division of Agricultural Sciences

Agriculture has always been America's basic industry and is more important today than ever. The agricultural industry has developed rapidly in mechanization and efficiency of production. The men and women engaged in agricultural research, production, and marketing must therefore have an understanding of new scientific and technological developments. They must also have a solid foundation in the basic sciences.

All students interested in agriculture will be given an opportunity to obtain a broad understanding of its various phases. Some may want the two-year technical program: others may specialize by taking a four-year major in one of the departmental curricula that will prepare them for farm and ranch management, employment in related agricultural business or government, or teaching and research. For certain kinds of work it will be necessary to place strong emphasis on preparation in the basic sciences and on graduate study for an advanced degree.

College of Business

Merrill J. Bateman, Dean (154 JKB)

Students may graduate with a major in one of the following departments in the College of Business:

Accounting
Business Education
Business Management
Economics
Statistics

College Advisement Center

Peggy Card, Supervisor (266 JKB)

The advisement center provides information and assistance on registration, requirements for graduation, policies and procedures, fields of study, changes of major, up-to-date records, and many other aspects of the academic life of the college.

Objectives of the College of Business

The primary purpose of the College of Business is to assist the student in achieving success in business, government service, professional education, or graduate study. Programs within the college are designed to provide learning experiences to help the student acquire knowledge, insight, maturity, competence, and a sense of business ethics.

Recommended High School Preparation

Because of the increasing use of mathematics and communications in business, a student who plans to enroll in the College of Business and who wants to complete the prescribed curricula without loss of time should preferably have successfully completed the following high school courses or their equivalent:

3 units of English
3 units of mathematics, consisting of 2 units of algebra and 1 of geometry

Students who have not completed the mathematics suggested above in high school will be required to remedy the deficiency before registering for Math. 110.

Division of Business Fundamentals and College Core Requirements In Four-Year Degree Programs

All students who plan to complete a baccalaureate degree program in the College of Business must register as majors in the Division of Business Fundamentals until they have completed specific course and grade-point requirements as specified by each department within the college.

Two-Year Secretarial Program

A two-year secretarial program leading to an associate degree is offered in the Business Education Department. Upon completion of this program, a student may easily transfer to one of the department's four-year programs that leads to a baccalaureate degree. A description of the requirements is contained under Business Education in the List of Courses section.

Two-Year Data Processing Program

A two-year data processing program leading to an associate degree is offered in the Business Education Department. A description of the requirements is contained under Business Education in the List of Courses section.

Graduate Programs

Graduate Programs offered through the Graduate School are—
Master of Science in Business Education (M.S.)
Master of Science in Economics (M.S.)
Doctor of Education in Business Education (Ed.D.)

Students who contemplate entering one of these graduate programs should consult with the department chairman prior to registering for upper-division classes in the undergraduate program.

In addition, the following graduate programs are available in the Graduate School of Management—
Master of Business Administration (MBA)
Master of Public Administration (MPA)
Master of Accountancy (MAcc.)
Master of Organizational Behavior (MOB)

Students who contemplate entering one of these graduate programs should obtain a copy of the *Graduate School of Management Bulletin*, which describes the program requirements. Specific details may be obtained by consulting with the director of each program.

College of Education

Curtis N. VanAlfen, Dean (118 MCKB)

The following departments are included in the College of Education:

Educational Administration
Educational Psychology
Elementary Education
Instructional Science
Secondary Education and Foundations

The College of Education has two principal functions: (1) the education of teachers, counselors, school psychologists, school librarians, principals, supervisors, superintendents, and other professional workers in education, and (2) research concerning educational processes.

College Advisement Center

Elaine Clark, Supervisor (West Basement, JSB)

The college advisement center (CAC) is designed to help students with any academic need and to assist them to successfully progress from the day of orientation through graduation as smoothly as possible. Students are encouraged to freely use the academic services of the center.

Responsibility for the Preparation of Teachers

All certificates for teaching, counseling, school psychology, instructional media, supervising, administration, special education, and library work in the public schools of Utah are granted by the State Department of Public Instruction.

When all requirements for state certification have been fulfilled, students of the University registered in any of its colleges or in the Graduate School will be recommended for certification by the dean of the College of Education, who gives final approval on all aspects of the teacher education program, including matters pertaining to general education, professional education, and teaching majors and minors.

Students desiring state certificates should make application with the dean of the College of Education through the Teacher Clearance Office, and not with the State Department of Public Instruction.

Elementary School Teaching. Students interested in elementary school teaching should register in the College of Education. Prior application and acceptance are required for admittance to the beginning course in the educational sequence (ElEd. 200). **Because of a state quota limiting the number of graduates, admission to the program may be delayed two semesters.** For course listings and prerequisites see the Department of Elementary Education section of this catalog. A dual certification program is cosponsored in cooperation with the following departments: Special Education, Early Childhood Endorsement (preschool and kindergarten), and Educational Psychology (communicative disorders). Students desiring to obtain a second certificate from any one of the above should register with that department as a major. Students may receive a junior high school endorsement by completing an approved teaching minor.

Secondary School Teaching. Students planning a career in secondary school teaching should register in the department of their academic major. Those choosing a composite teaching major should consult with the Teacher Clearance Office concerning their area of registration. There is no major in secondary education per se, but students must complete the professional education requirements as well as the academic major and minor. It is recommended that students begin this sequence (SecEd. 276) as early as the sophomore year so that adequate attention can be given to the balance of the certification program without undue pressure on subsequent scheduling. For course listings and prerequisites in this area, see the Department of Secondary Education and Foundations section of this catalog.

Special Education. Students interested in teaching children with intellectual handicaps, emotional disturbance, learning disabilities, or communicative disorders should plan their programs during their freshman year with the special education adviser in the Teacher Clearance Office. Individuals who certify in these specialized areas are advised to obtain regular elementary or secondary teaching certificates. Early planning will enable students to complete requirements for basic professional certification in special education along with their regular four- or five-year program. Formal application and acceptance into this program is necessary. Further information may be obtained from the Coordinator of Special Education.

The area of communicative disorders emerged from speech therapy and speech pathology. It prepares students for employment as communication specialists in schools, hospitals, rehabilitation centers, and other agencies and in private practice. Students deal with the diagnosis, prescriptive planning, and habilitation of communicative disorders, including problems in speaking, hearing, language, listening, and reading. Professional certification in Utah and many other states, as well as in the American Speech and Hearing Association, requires a master's degree.

Indian Education. Students interested in teaching Indian children are encouraged to enter either the elementary or secondary teaching certification program. While students are completing these programs, they may take certain Indian Education courses to enhance teaching competency. As students apply for an additional student-teaching experience, they indicate their desire for a teaching assignment in a public school and with Indian students. For further information, contact the College of Education or the American Indian Education Department.

Community College Teaching. The College of Education provides appropriate training for graduate students who are interested in community college teaching. Students who are registered with the Graduate School in a program leading to a master's degree in an academic subject area may complete the requirements for a community college teaching credential by enrolling in professional education courses offered in the graduate program.

Curriculum and Instruction. Qualified students seeking specialization in the areas of curriculum and instruction may pursue work leading to the Master of Arts, the Master of Education, or the Doctor of Education degrees.

Counseling and Guidance. The Counselor Education Program prepares counselors to serve in a variety of possible settings. Students select at least one of the following area specialties: elementary school counselor, secondary school counselor, college student personnel counselor, agency counselor (employment, welfare corrections, etc.), and Church counselor (Seminary or Institute, chaplaincy, bishopric, etc.). School counselors must be certified by the state, which requires a master's degree or its equivalent, a teaching certificate or an approved counseling internship in a school setting, and a recommendation from the counselor education faculty. Many states also require teaching experience.

School Psychology. The Department of Educational Psychology and the Psychology Department jointly offer a program leading to state certification as a school psychologist. This program requires a master's degree, and certification ordinarily takes two years beyond the bachelor's degree to complete.

Public School Administration. Certification as a public school administrator in Utah requires a minimum of two years of successful teaching experience and the master's degree or equivalent. The courses listed in the departmental brochure enable the candidate to obtain the appropriate administrative endorsements.

Instructional Science and Technology Programs. Graduate and undergraduate research internships and theory; product research; systems evaluation; and technological systems design involving electronic, electrochemical, print, and instructor delivery systems lead to professional design positions in universities and industrial, government, public school, and church environments.

Laboratory of Experimental Study of Instruction (M. David Merrill, Director, W-164-G STAD). The laboratory is jointly sponsored by the College of Education and the Division of Research, Development, and Evaluation. Its purpose is to extend theory and research of instructional processes.

Certification Procedures

Those in secondary education composite programs consisting of minors in three fields should register in the College of Education. All others will register in the colleges in which they are majoring. **Candidates for a secondary teacher's certificate, regardless of the college in which they have registered, must have their certification program approved in the Teacher Clearance Office, West Basement JSB, while enrolled in SecEd. 276, the first course in the professional education sequence.**

All students in teacher certification programs (except those in secondary education) will be required to meet minimum standards in speech and hearing. Speech and hearing tests may be required in the first course in the certification cycle.

How to Become Certified. Students who complete the certification requirements set forth by the College of Education, regardless of the college in which they are registered, are eligible for a certificate issued by the Utah State Board of Education. Certification is approved by that board after the student has applied for certification through the dean of the College of Education, who, in turn, recommends the student to the state board.

Students will be held responsible for certification requirements as outlined in the catalog in effect during the year in which they are admitted to the education program. Students may prepare themselves to be certified in any of the following areas:

Teacher in early childhood (preschool to grade 3)
Teacher in elementary schools
Teacher of special education

Teacher in communicative disorders
Teacher in secondary schools
Teacher of industrial arts in secondary schools
Teacher of vocational homemaking in secondary schools
Teacher of unit shops in industrial arts
Librarian in secondary schools
Counselor
School psychologist
Instructional media specialist
Administrator-supervisor in elementary schools
Administrator-supervisor in secondary schools
Superintendent

Certification in Other States. Students planning to teach in states other than Utah should check with the Teacher Clearance Office, West Basement JSB, for information relative to certification requirements in those states.

Basic Professional Certificate. Certification of teachers is a function of the Utah State Board of Education. The Board of Education publishes requirements for certification in booklet form and in supplements. The present policy of the board is one of stating minimum requirements in general terms. This is done to encourage the institutions that prepare teachers to engage in continuous study of the requirements, going beyond the minima in whatever ways seem desirable. The Utah State Board of Education requires recommendation by the institution's dean of education.

Alterations in the requirements may be made from time to time. They will not be retroactive but may apply to uncompleted portions of a student's program.

Requirements for Dual Certification. An individual who has met the requirements for a general elementary school certificate may obtain a general secondary school certificate by meeting certain additional requirements. The state's requirements for subject-matter major, minor, or composite teaching major must be completed. In addition, the individual must complete certain courses in methods of teaching and in student teaching at the secondary school level. An individual who has met the requirements for a general secondary school certificate may obtain a general elementary school certificate by completing certain courses in methods of teaching and in student teaching at the elementary school level. Specific instructions for these programs are available in the Teacher Clearance Office, West Basement JSB.

Selection of Candidates. Candidates for certification as teachers should expect to be screened carefully. Only individuals of high caliber who have acquired a substantial general education, whose mastery of their major and minor fields is unquestioned, and whose personal character reflects the best ideals of our culture will finally be recommended for certification.

The selection of those who will be finally recommended for certification is a continuous process. It begins when students first announce their intention of seeking certification, and continues through all stages of their education. One basic requirement is that the student maintain a total college cumulative grade-point average and a semester grade-point average of 2.25 or higher (elementary education requires 2.50).

Transfer Students. To transfer from another university or from another college within BYU to the College of Education at Brigham Young University, the student must have a cumulative grade-point average of 2.25 or higher (elementary education requires 2.50).

College of Engineering Sciences and Technology

L. Douglas Smoot, Dean (270 CB)

The College of Engineering Sciences and Technology is composed of the following six departments:

Chemical Engineering
Civil Engineering
Electrical Engineering
Mechanical Engineering
Industrial Education
Technology

In the 1980s and the 1990s, the world's expectation of its engineering and technical personnel will range from providing for interplanetary exploration and travel to solving such earthly problems as pollution, transportation, efficient energy utilization, and new materials and products, as well as many other exciting and challenging needs. These expectations are limited only by our imagination, desires, and technical resources. They will be best met by men and women well educated and completely dedicated to having a better world.

The solution to man's present and future problems will require people trained as craftsmen, technicians, technologists, and engineers working together as a team. Each of the departments in the College of Engineering Sciences and Technology has a faculty with special training and advanced education, including years of work experience, which qualifies them to prepare students for these technical careers. Each department also has modern, well-equipped laboratories that provide exciting and valuable hands-on experience for the student.

It is very important for the student to understand the differences between the various programs of the college and decide as early as possible which career to select. This is especially true for engineers and technologists. It is also important for students to understand the differences between scientists and engineers. Helpful information for the student can be obtained from the college advisement center.

College Advisement Center

Ruth Morrison, Supervisor (278 CB)

The advisement center provides information and assistance on registration, requirements for graduation, policies and procedures, fields of study, changes of major, up-to-date records, and many other aspects of the academic life of the college. The center is a "center for students" and as such offers help to any student.

College Programs

The alignment of engineering with technology and industrial education makes it possible to offer, in a single college, a broad spectrum of training within which students interested in preparing for a career in our challenging technological world can find opportunity to utilize their interests and capabilities. This rich offering encompasses two-year associate-degree programs, four-year baccalaureate-degree programs, five-year programs leading to the Master of Science, Master of Engineering, and Master of Industrial Education, and a program jointly administered by the engineering departments leading to the Doctor of Philosophy degree.

Many students find that the bachelor's degree program in engineering is excellent preparation for such other professional careers as law, medicine, MBA degrees, and business.

General Education Requirements

All students who receive an associate or baccalaureate degree must satisfy the University's general education requirements. Each student should study carefully the general education programs section of this catalog, which detail the former general education program requirements as well as the new program requirements. The biological science requirement is 4 semester hours for all engineering majors who are completing the former requirements for the baccalaureate degree.

It is of extreme importance to maintain constant progress in the major technical area because of prerequisite structure. Students are cautioned against devoting early semesters solely toward the completion of general education requirements, and thus falling behind in technical areas. Instead, it is recommended that an integrated study program of general education and technical requirements be followed. Suggested sequences of courses are shown for each major in the respective departmental sections of this catalog.

Cooperative Education—Work While You Learn

The value of actual on-the-job working experience cannot be overemphasized. When obtained during the learning process, it adds materially to understanding and incentive. It also has a by-product of assisting with educational expenses. Several kinds of work experiences are available. With the flexibility of the 4-4-2-2 trimester schedule, the possibilities have been increased severalfold. The simplest arrangement, perhaps, is finding technical employment during the summer. Departments and the Placement Center work together to assist the student in finding suitable employment. We also have arrangements with several companies for "co-op" placement, wherein the student works in industry for a period of time and then returns to school for a period, sometimes alternating work and learning experiences several times.

Students interested in work-while-you-learn experiences should contact their major department chairman or the cooperative education coordinator in the dean's office.

Industrial Education

The Department of Industrial Education provides baccalaureate programs for training industrial arts teachers for elementary, junior high, and senior high schools and technical education teachers for vocational and technical schools. This department also offers master's degree graduate programs for advanced preparation of supervisors, coordinators, and administrators in industrial and technical education. In cooperation with the College of Education, the Department of Industrial Education offers the Doctor of Education degree with minor emphasis in industrial education.

Technology

The Department of Technology offers four-year baccalaureate programs in building construction, physical plant administration, design and graphics, electronics, and manufacturing. The latter three programs are accredited as engineering technology programs by the Engineer's Council for Professional Development (ECPD) and generally have been recognized as some of the best available in their respective fields. This department also offers two-year associate degrees for techniques in drafting, electricity, electronics, graphic arts, light building construction, materials science, and welding. A master's degree in computer-aided manufacturing is also offered.

Engineering Sciences

Engineering with a strong emphasis on mathematics and the basic sciences has been offered at Brigham Young University since 1952. Graduates have found acceptance in the best graduate schools and in top industrial organizations. Many are already in key positions in leading industries or have important assignments with government agencies. Our graduates have always been able to secure good jobs. With the evident need extending well into the future for those skilled in solving technological problems, a degree in engineering from Brigham Young University is a valuable professional accomplishment.

Bioengineering is one example of a rapidly developing opportunity for engineers. Biomedical engineers use engineering science and technology to solve problems in biology and medicine. They design devices such as cardiac pacemakers and artificial joints and develop materials and instruments of all kinds for use in medical care and research. A student at Brigham Young University preparing for a career in biomedical engineering should complete his or her undergraduate study in one of the established engineering disciplines, adding course work from the biological sciences.

To complete the prescribed criteria without loss of time, students planning to enroll in engineering should have successfully completed the following high school courses or their equivalents:

3 units of English
4 units of mathematics, consisting of 2½ units of algebra, 1 unit of geometry, and ½ unit of trigonometry. This should qualify the student to commence mathematics with analytic geometry and calculus
1 unit of physical science (either chemistry or physics)
1 unit of drafting or mechanical drawing

Students who have not completed these requirements are strongly advised to plan to enter Brigham Young University for the **Summer Term,** beginning in June. If deficiencies are not too serious, they can probably be made up by the Fall Semester.

Each of the four engineering departments (chemical, civil, electrical, and mechanical) offers a four-year curriculum leading to the Bachelor of Science degree. Each of these is accredited by the Engineers' Council for Professional Development (ECPD). A four-year curriculum leading to the degree of Bachelor of Science in Geological Engineering is offered in the Department of Geology.

The Master of Science and Master of Engineering degrees are also available after completion of approximately one year of work beyond the requirements for the baccalaureate degree.

A Ph.D. degree is also available in engineering. This is administered by an interdepartmental committee so as to afford students maximum flexibility in the arrangement of their programs.

All of these programs can be completed in approximately one-fourth less total time by taking advantage of the Spring and Summer Terms. Most departments have shown in their curricular outlines how this may be done.

Two-Year Technician Programs

Because of the increasing complexity of industrial operations, more and more students who have completed two years of study find fruitful and satisfying employment. The Departments of Chemical Engineering and Civil Engineering now have curricula leading to the associate degree upon completion of approximately two years (four semesters) of work. Those interested in such programs should contact their major department chairman. In addition, the following programs are offered through the Department of Technology:

Drafting Technician
Electrical Technician
Electronics Technician
Graphic Arts Technician
Light Building Construction Technician
Materials Science Technician
Welding Technician

Prearchitectural Curriculum

Since Brigham Young University does not offer a degree program in architecture, it is suggested that those students wishing to pursue such a degree select the architectural school from which they wish to obtain their degree. Careful study of the program from this selected institution will enable a student to enroll in a limited number of classes at BYU which will apply at this institution. Early transfer to this selected institution will (unless a bachelor's degree is required for admission to their architecture program) allow a minimum loss of credit when the transfer is made. A list of accredited schools of architecture is available in the advisement center.

Selection of courses at BYU depends largely on the individual's area of interest and on whether the school of architecture offers an undergraduate degree program or a graduate degree program. We suggest a number of fields that may be productive if a bachelor's degree is required by the selected school—civil engineering, building construction technology, design and graphics technology, art and design in the College of Fine Arts and Communications, and perhaps others.

A student interested in landscape architecture may benefit by majoring in or taking courses in agronomy and horticulture. If he or she is interested in homes and small buildings, building construction technology offers excellent preparation. On the other hand, if a student is more interested in large commercial buildings, civil engineering offers instruction in structures, foundations, soils, and the like. A student interested in the planning aspect of architecture would probably find the program in design and graphics technology or art and design more to his or her interest.

The advisement center is examining the programs of accredited architectural schools with the plan of suggesting preparatory classes that are equivalent to a number of those required by each school. We also will contact several of the schools most commonly selected to make arrangements for an agreed-upon list of preparatory courses at BYU that will be acceptable for transfer.

Graduate Programs

Each graduate student must meet all of the requirements for advanced degrees as outlined by the Graduate School and as set forth in this catalog under the major department. The responsibility for knowing and fulfilling these requirements rests with the student.

Programs. Master of Science (M.S.) and Master of Engineering (M.E.) degrees are offered in civil engineering, chemical engineering, electrical engineering, and mechanical engineering. The Master of Science (M.S.) and Master of Industrial Education (MIE) degrees are offered in the Department of Industrial Education. A Master of Science (M.S.) degree in computer-aided manufacturing is offered in the Department of Technology.

A Ph.D. program in engineering is offered as an interdepartmental program administered by an executive committee of the engineering faculty. A Doctor of Education degree in industrial education is available in cooperation with the College of Education.

Master of Science Program. The Master of Science (M.S.) degree requires approximately one year of work beyond the requirements for the baccalaureate degree, including a thesis and a final oral examination. The Master of Science degree provides an excellent engineering background for those students preparing for industrial careers, careers in research, or for those planning to go on for a doctoral degree. Students should refer to the engineering, industrial education, or technology sections of this catalog for more specific information regarding a particular Master of Science degree.

Master of Engineering Program. The Master of Engineering (M.E.) degree requires approximately one year of work beyond the requirements for the baccalaureate degree, including an engineering study or project and a final oral examination. This degree is designed to provide advanced engineering training at the master's level with emphasis on professional development. Because no thesis is required, the student does not receive special treining for research work. Students desiring such training should consider the M.S. or the Ph.D. programs. Students should refer to the engineering sections of this catalog for more specific information regarding a particular Master of Engineering degree.

Master of Industrial Education Program. The Master of Industrial Education (MIE) degree requires approximately one year of work beyond the requirements for the baccalaureate degree including a field project and a final oral examination. This program is designed to meet the needs of industry and education by providing specialization for management, supervision, and training in industry, as well as master teachers, supervisors, and coordinators of industrial education. Students should refer to the industrial education section of this catalog for more specific information on this program.

Integrated Master's Program. At the end of the sophomore year or during the junior year of the engineering curriculum, a student who desires to obtain a master's degree in Engineering (either M S. or M.E.) may elect to enter the integrated master's program. The purpose of this program is to afford students greater flexibility in scheduling their course work than is normally available through the traditional B.S. degree followed by an M.S. or M.E. degree program. In this program the student may work toward both the bachelor's and master's degrees concurrently and receive both simultaneously upon graduation at the end of the program (normally five years from freshman matriculation).

Interested students should refer to the engineering sections of this catalog for more detail regarding this program and should contact the specific department of interest for procedures, application forms, and other details.

Ph.D. Program in Engineering

Executive Committee. Berrett, Heaton (chairman), Karren, Solen

The Ph.D. program in engineering is an interdepartmental program administered within the college by an executive committee of the graduate engineering faculty of the four engineering departments. Approximately 50 semester hours are required beyond the baccalaureate degree, plus the dissertation. A qualifying entrance examination, competence in a tool requirement, and satisfactory completion of the final comprehensive exams are also required. The master's programs in engineering are administered by each department separately but are coordinated with the Ph.D. program for those who wish to continue beyond the master's level.

The course work offered in this program is included under each of the four participating engineering departments (chemical, civil, electrical, and mechanical). Specific requirements for the Doctor of Philosophy degree are included in the Graduate School section of this catalog. Interested students are referred to both sections for further information.

Entrance Examination Required. Qualifying examination. The student should contact the chairman of the Executive Committee for details.

Application Consideration Dates and Entry Times. Same as those of the Graduate School schedule except for chemical engineers, who should see their department's section of the catalog.

Prerequisites. A bachelor's or master's degree (or equivalent) from an accredited engineering school. Other bachelor's or master's degrees in the physical science fields may be acceptable for provisional admission. A grade-point average of 3.0 out of 4.0 is the minimum acceptable for regular degree-seeking status. Students with a grade-point average below 3.0 can sometimes be admitted on a provisional basis.

Tool Preparation. Satisfactory completion of any **one** of the following tool requirements:

Tool Requirement 1: (Single language) demonstration of a thorough familiarity with the French, German, Russian, or Spanish language.

Tool Requirement 2: (Two languages) demonstration of an adequate familiarity with French, German, Russian, or Spanish and a second language recommended by the department.

Tool Requirement 3: (One language and one tool subject) demonstration of an adequate familiarity with French, German, Russian, or Spanish and any **one** of the following:

1) Stat. 501 (5) plus any **one** of Stat. 337 (3), 421 (3), 502 (5), 531 (3), or 534 (3)
2) Stat. 321 (3) or 332 (2) plus any **one** of Stat. 432 (3), 433 (3), or 541 (3)
3) ComSci. 231 (3) and 580 (4)

Tool Requirement 4, consisting of 21 semester hours of mathematics (beyond and excluding Math. 111 or its equivalent) and/or computer science in any combination.

Fields. Chemical Engineering: Combustion, environmental control, fluid mechanics, nuclear engineering, thermodynamics.

Civil Engineering: Geotechnical engineering, structures and structural mechanics, transportation engineering, water resources, environmental engineering.

Electrical Engineering: Communications engineering, computer engineering, power engineering, solid-state electronics.

Mechanical Engineering: Applied mechanics, machine design, manufacturing, nuclear engineering, thermosciences.

College of Family Living

Blaine R. Porter, Dean (1206 SFLC)

The following departments are in the College of Family Living:

Child Development and Family Relationships
Clothing and Textiles
Family Resource Management
Food Science and Nutrition
Home Economics Education
Interior Environment

College Advisement Center

Larry Taylor, Supervisor (206 SFLC)

The advisement center provides information and assistance on registration, requirements for graduation, policies and procedures, fields of study, changes of major, up-to-date records, and many other aspects of the academic life of the college. Advisers are available to consult with students in the selection of programs that best fit their educational goals and at the same time contribute more effectively to their broad education and professional training.

Goals and Purposes

The goals of the College of Family Living are to increase and disseminate knowledge related to the family as the basic unit of society and to further promote the goals of the University and The Church of Jesus Christ of Latter-day Saints.

The College of Family Living contributes to the total University community by offering courses designed to develop insight into and understanding about the many facets of family life. Likewise, the curricula in the College of Family Living are enriched by courses offered throughout the University in the arts, the humanities, and the biological, physical, and social sciences.

Because many activities that were at one time confined to the home have moved out into the community, specialized professional services are now available to homes and families. One of the purposes of the College of Family Living is to prepare individuals who will be qualified to assume positions of leadership and responsibility in providing these professional services.

In addition to offering professional training, the college has as one of its primary goals that of preparing individuals to become successful family members, i.e., appreciative children, loving brothers and sisters, devoted and faithful husbands and wives, and responsible, effective parents. This preparation for one's personal life accompanies professional training regardless of the area of specialization that is selected and thus makes an unusual and significant educational experience available to students.

Associate Degree

Larry Taylor, Supervisor (206 SFLC)

The associate degree offered through the College of Family Living has two options for students who wish to become more proficient in homemaking and family relationships and at the same time develop abilities and skills that can be put to use occupationally.

The Associate Degree in Family Living provides a broadly based program with courses selected from the various departments within the college. The Associate Degree in Child Development offers specific training in dealing with children and with parent education and meets the standard of the national program of Associate in Child Development. Both of these options lend themselves to planning so that a student may transfer to a four-year program leading to a baccalaureate degree in the College of Family Living.

For specific requirements, please consult the College of Family Living Advisement Center.

Baccalaureate Degree

The bachelor's degree is offered in all six departments within the college. Areas of specialization include child development, clothing and textiles, consumer studies, dietetics, early childhood education, interior environment, family finance, family relationships, fashion merchandising, food science, home economics education, home management, equipment and housing, and nutrition.

Specific requirements for each major offered in the College of Family Living are described in detail in each departmental section.

Bachelor's Degree in Family Studies. A composite major is offered in the College of Family Living similar to the program in home economics education except that it does not qualify one for a teaching certificate. It is ideal for students who are interested in a general program drawing from several or all departments in the College of Family Living but not interested in a professional career. This program is also suggested for students who would like to major in the college but have not yet decided upon which department. A detailed description of this program and specific requirements for graduation may be found in this catalog under the Family Studies section.

Graduate Study

Attractive opportunities and a serious need for the contributions of highly trained professional people are encouraging outstanding students to pursue graduate studies. The College of Family Living provides curricula leading to the master's degree in child development, early childhood education, family life education, family relationships, food science and nutrition, marriage and family counseling, and home economics education. The Ph.D. degree is offered in child development and family relationships, family studies, and marriage and family counseling.

Students who have completed all requirements for the bachelor's degree and who wish to continue their studies are registered in the Graduate School. To participate in one of the graduate programs offered by the College of Family Living, the student must make application through University Admissions specifically for degree-seeking status.

Scholarships and Awards

Scholarships and awards are available to qualified students in all departments of the college. Graduate scholarships are also available to students in those departments offering graduate programs.

Scholarship and award recipients are selected by a college scholarships and awards committee. Applications may be obtained from the dean's office or the college advisement center. Specific information regarding qualifications for individual awards and scholarships may be obtained at the dean's office, in the advisement center, and from the chairman of individual departments.

Professional and Honorary Organizations

Students at the advanced undergraduate and graduate levels are encouraged to take advantage of student membership in professional organizations. The cost for student membership is minimal and the benefits usually include subscriptions for professional journals, reduced registration fees at professional meetings, assistance in securing positions upon graduation, and an early introduction into the professional world.

Local and national honor societies recognize superior scholarship, aid in the development of qualities essential to leadership, and encourage research and other professional activities.

College of Fine Arts and Communications

Lael J. Woodbury, Dean (A-410 HFAC)

The following departments are in the College of Fine Arts and Communications:

Art and Design
Communications
Music
Theatre and Cinematic Arts

The University has a long tradition of providing all students with a rich experience in fine arts and communications. Fifty percent of the entire student body take courses in the Harris Fine Arts Center each semester. In any one year more people attend the college arts events than all of the home football and basketball games combined. Student and faculty touring groups reach out to the entire Church and many foreign countries. In journalism, students who edit the *Daily Universe* and *Banyan* yearbook receive their direction and advisement from faculty members.

Programs leading to professional careers are offered in each department. The faculty includes men and women of the highest professional distinction and academic discipline. The college also brings to campus many artists, special lecturers, and practitioners directly from professional fields. The Harris Fine Arts Center provides five speech and drama theatres, two ideal concert halls, two magnificent art galleries, broadcast and journalistic laboratories, clinics, and practice rooms—plus an atmosphere of creative enterprise. All of these resources combine to help students establish competence in their chosen careers and build life values in their cultural pursuits.

College Advisement Program

Beverly Chynoweth, College Advisement Center Supervisor (D-444 HFAC)

Students receive help in planning for registration from three major sources:

1. This catalog outlines the basic requirements for graduation in the twenty-two areas of emphasis encompassed in the Departments of Art and Design, Communications, Music, and Theatre and Cinematic Arts.
2. Students who need help in assessing their potential competence are assigned to faculty members within the departments for personal consultation. Here their skills and talents are explored, and in some cases prognostic tests are given to reveal potential success.
3. All students who register as majors in any of the college departments are urged to consult with the college advisement center. Individual student records showing progress to date and courses needed to complete requirements are available for inspection by the student and academic advisers, who together plan a schedule for course completion.

Scholarships and Awards

Scholarships, awards, and grants-in-aid are available to qualified students in all departments of the College of Fine Arts and Communications. A number of these are reserved for high school graduates and transfer students qualified because of scholarship, outstanding skills, or leadership.

All scholarships and awards are under the jurisdiction of the University Scholarship Committee. Applications for such awards may be obtained from the chairman of this committee. Specific information regarding individual qualifications may be had from the chairman of the individual departments.

For information regarding scholarships, fellowships, and grants-in-aid for graduate study, see the Graduate School section of this catalog.

College of General Studies

C. Terry Warner, Dean (106 HGB)
Marion J. Bentley, Assistant Dean for General Education (130 FOB)
David M. Sorenson, Assistant Dean for Career and Minority Programs (A-209 ASB)
Bartley E. Day, Assistant to the Dean (141-B BRMB)

The College of General Studies consists of the following academic areas and departments:

Air Force ROTC (Aerospace Studies)
Army ROTC (Military Science)
Career Education Program
General Education Learning Center
Honors Program
Indian Education
Minority Education
Philosophy
University Studies

In addition to these areas and departments, the college includes three other agencies that have University-wide impact: the college advisement center, the University's general education program, and the University's tutoring service. These are described below.

With the exception of degree-seeking students in the Department of University Studies, each student enrolled in the college either has degree-seeking status in one of the other colleges or is preparing for such.

The college specializes in individualized advisement and academic support for its students; the techniques it employs for this purpose for Honors students, Indian students, general studies students without majors, ROTC cadets, students on academic warning and probation are among the most advanced and successful in the nation.

College Advisement Center

Jerry L. Jensen, Supervisor (130 BRMB)

Records of all students in the college, excepting ROTC cadets, are housed in the college advisement center. These records are thoroughly evaluated prior to individual advisement appointments of students with faculty and staff in the several departments. Advisement visits are scheduled and followed up by the advisement center staff. Because of the center's management of the advisement operation, departments make maximally efficient use of faculty time in advising students.

General Education Operations

Marion J. Bentley, Assistant Dean (130 FOB)

Assisting the General Education Committee of the University, this office coordinates and facilitates faculty and administration activity in the New General Education Program. It correlates receipt and review of evaluation proposals and otherwise ensures the communication of general education development at the faculty and administrative level. Though this office also prepares or approves all communications to students about the New General Education Program, all student contacts with the general education program are through the college advisement centers or their major supervisors.

Tutoring Service

Jerry L. Jensen, Coordinator (130 BRMB)

This service, performed by students approved by department chairmen to act as tutors, is available to all BYU students who need help beyond their regular classroom instruction.

A description of this service is found in the Student Services section.

College of Humanities

Bruce B. Clark, Dean (129 JKBA)
R. Max Rogers, Associate Dean (240 B-34)

The following departments and areas are in the College of Humanities

American Studies
Asian and Slavic Languages
English
French and Italian
Germanic Languages

Humanities, Classics, and Comparative Literature
Latin American Studies
Language and Intercultural Research Center
Linguistics and Special Languages
Spanish and Portuguese

College Advisement Center

Dale King, Supervisor (144 JKBA)

Advisers in the college advisement center and in the departments are available to consult with students in the selection of programs that best fit their educational goals and at the same time contribute most effectively to their broad education and professional training.

Goals and Program

The College of Humanities was created on June 1, 1965, through a division of the former College of Humanities and Social Sciences, although the basic subject areas of literature and language taught in the college have been important areas of the University since its beginning.

Emphasis in the college is on the study of languages, both English and foreign, and on the cultures and the achievements in art and thought of the people who use these languages. In other words, the college is heavily involved in what is traditionally called "liberal" education, both for those who major or minor in the college and for those who are served by it through the general education programs. In their ultimate goals, the humanities seek to discover, preserve, and disseminate the best of man's thoughts and creations.

There are three large purposes for which the instructional program of the College of Humanities has been designed. First is intensive training in the science of language, in English composition, and in basic comprehension of foreign languages for all students of the University. Second is the provision of a broad, liberal education through literature and other humanities courses designed to acquaint students with the values of today's complex civilization and to help them contribute to the best of those values. Third is the preparation of highly skilled professional men and women—professionals deeply rooted in the humanities and able to fill positions of responsibility and leadership, especially as teachers, but also as educated leaders in many other areas.

Courses intended to contribute to the first two purposes are offered as a service to all BYU students. Career programs for those who choose to do their major work in this college are offered in each of the seven regular departments and the two interdisciplinary areas. Degrees currently available in the College of Humanities are—

Master of Arts: American Literature, Classics, Comparative Literature, English Language, English Literature, French, German, Humanities, Latin-American Studies, Linguistics, Portuguese, Spanish, TESL
Bachelor of Arts: American Studies, Chinese, Comparative Literature, English, French, German, Greek, Humanities, Italian, Japanese, Latin, Latin-American Studies, Portuguese, Russian, Spanish, Spanish-Speaking American Studies
Associate of Arts: Classical Civilization, Humanities, Portuguese, Spanish.

The college also is engaged in research, especially in the language-translation and intercultural programs of the Language and Intercultural Research Center, directed by R. Max Rogers.

College of Nursing

Maxine J. Cope, Dean (2240-B SFLC)

A nursing career offers a life that is rewarding and a future that is secure. Throughout the world, thousands of men and women are needed as nurses in hospitals, clinics, public health agencies, military services, comprehensive mental health centers, health missions, and in various kinds of practitioner roles.

Programs

To prepare nurses to meet many different employment opportunities, Brigham Young University College of Nursing offers a career mobility program consisting of three phases with multiple entrances and exits.

Phase 1, Associate Degree. A.D. graduates are prepared with liberal and technical education. They are able to plan, implement, and evaluate general nursing care in a variety of health-illness situations. Their sound scientific background provides a base for entering into the B.S. phase.

Phase 2, Baccalaureate Degree. B.S. graduates are prepared with scientific and professional education for primary care practice. They have the skills necessary for physical and psychological assessments needed to promote and provide professional nursing care. Utilizing leadership knowledge and skills, they influence change and help achieve a higher level of health for patients and their communities.

Phase 3, Master's Degree. The graduate program prepares professional nurses to become master clinicians in specialty areas such as cardiovascular, neurological, oncological, and family nursing. The basis of this program is to prepare for clinical leadership roles in episodic or distributive care settings. Teaching, supervising, and research experience are included.

Nurses prepared at the graduate level are in great demand as clinical specialists, researchers, faculty, and leaders.

The graduates of either the A.D. or B.S. phases are eligible to take the State Board Test Pool examinations for licensure to practice as R.N.'s (registered nurses).

Registered nurses seeking a bachelor's degree may enter the program at the level for which they qualify. Admission and placement are made on an individual basis.

College Advisement Center

Norma Rae Arrington, Supervisor (2251 SFLC)

The college advisement center (CAC) is designed to help students with any academic need and to assist them to successfully progress from the day of orientation through graduation as smoothly as possible. Students are encouraged to freely use the academic services of the center.

Admission Policies and Criteria

Admission to Brigham Young University does not mean that a student will be admitted to the nursing program.

The following criteria and procedures have been established for admission to the College of Nursing's clinical program (Nurs. 106). To be considered for admission, students—

1. must be fully matriculated at BYU.
2. must have completed the required supporting courses (Chem. 102, RelA. 121, Zool. 260 and 261, Psych. 111) with a C grade or higher (a C− is not acceptable);
3. must have obtained an overall grade-point average of not less than 2.5;
4. must have personal characteristics and traits which enable them to function effectively in their course work and to relate effectively to others.

While students who meet the above criteria are eligible for consideration for admission, this does not necessarily mean they will be accepted into the program. Those who best meet the requirements (those with the highest grades) will be admitted first. A first consideration will also be given to those who intend to go on for a baccalaureate degree.

Students are responsible for informing the college advisement center when they are eligible for acceptance as well as the term for which they wish to be admitted.

Campus Assignment

Students will be assigned to the Provo or Salt Lake campus. Special needs will be considered when possible. However, students should understand that their preference for a specific campus cannot always be granted. Assignments will be made in accordance with resources and facilities for a high-level educational program.

Transportation

It is necessary that a student have an automobile or have access to one. Some of the educational experiences (particularly in public health) are in various areas in the community. It is necessary to make home visits to families.

College of Physical and Mathematical Sciences

Eliot A. Butler, Acting Dean (270 ESC)

The College of Physical and Mathematical Sciences consists of six departments. There are also two special category designations—physical science and science fundamentals.

Chemistry
Computer Science
Geology
Mathematics
Physical Science
Physics and Astronomy
Science Fundamentals
Statistics

Physical Science. The one course in this category, Physical Science 100, prepares students for one of the evaluations in natural science.

Science Fundamentals. This category has been established for those students who are unsure of a specific major but are interested in the physical and mathematical sciences. Such students should take fundamental courses in mathematics, physics, and chemistry during their first year while they evaluate their professional interests.

College Advisement Center

Helen Stillman, Supervisor (271 ESC)

The advisement center provides information and assistance on registration, requirements for graduation, policies and procedures, fields of study, changes of major, up-to-date records, and many other aspects of the academic life of the college.

Required High School Preparation

To complete the prescribed curricula without loss of time, a student enrolling in the College of Physical and Mathematical Sciences will need to have completed successfully the following high school courses or their equivalents:

3 units of English
4 units of mathematics, consisting of 2½ units of algebra, 1 unit of geometry, and ½ unit of trigonometry. This should be sufficient to qualify a student to commence college mathematics with analytic geometry and calculus.
1 unit of physical science, which should be either chemistry or physics

Because mathematics provides the foundation for all work in the physical and mathematical sciences, particular attention is paid to the high school preparation in this subject. If their high school training is found to be deficient, entering students will be required to take remedial work. It should be realized that the time required to complete the college program will probably be extended by the length of time necessary to make up these deficiencies.

To help determine which mathematics course should be taken first, students may write to the Mathematics Department, 292 TMCB, and request that a mathematics placement test be sent to them.

Students who will not have completed all recommended courses by the time they graduate from high school may complete them through Home Study or other courses offered by Brigham Young University High school seniors who have the time and ability may carry special courses which will be given college credit and which may be counted toward a baccalaureate degree. Information on any of these courses will be sent upon request.

Degrees Offered

Bachelor of Arts or Bachelor of Science degrees are offered in chemistry, chemistry teaching, computer science, earth science, geology, geological engineering, mathematics, physics and astronomy, and statistics. A Bachelor of Science degree in applied physics is offered as an option for those who wish to become familiar with reactor physics or nuclear engineering physics; it is outlined in the Physics and Astronomy section of this catalog. No degree is offered in the physical science area. It provides courses for other degree programs only.

The Master of Science degree is offered in chemistry, computer science, geology, mathematics, physics, and statistics. The Master of Arts degree is available in chemistry, mathematics, and physics. Programs leading to the Doctor of Philosophy degree are currently offered in chemistry, geology, and physics. All requirements for these advanced degrees are specified by the Graduate School and are found under *Graduate Program* in the Physics and Astronomy section.

Specially scheduled programs are available to students majoring in chemistry or physics who, before commencing their junior year, decide to obtain a master's degree. The MA-3, ME-3, and MS-3 programs integrate the work of the junior, senior, and graduate years into one program which has better continuity than is possible by the end of the senior year. For example, it is possible in these programs to obtain a much better foundation in mathematics before taking the more advanced courses. Arrangements can be made to award the bachelor's degree either simultaneously with the master's degree, or earlier if all requirements are completed.

College of Physical Education

Clayne R. Jensen, Dean (212 RB)
Donald D. Shaw, Assistant Dean (221-F RB)

The following departments and divisions are in the College of Physical Education:

Dance
Health Sciences
Intercollegiate Athletics
Physical Education—Men
Physical Education—Women
Recreation Education
Youth Leadership
Community School Regional Center
Intramural and Extramural Sports

The LDS Church, through its beliefs and teachings, has developed a unique reputation relative to health practices—one of active and vigorous living, leadership of youth, and wholesome use of time. Brigham Young University, in harmony with the objectives of the Church, provides its members with opportunities for both participation and active, exemplary leadership.

College Advisement Center

Dell Bown, Supervisor (205 RB)

Assistance in planning programs may be obtained through the College of Physical Education Advisement Center and the respective departments.

Goals

This college, unique among American universities, seeks to make three significant contributions: (1) provision of services to the students and faculty, (2) extension of University programs to the public, and (3) preparation of professional leaders. The college sponsors an extensive health education program, a variety of physical education activity courses, numerous intramural and extramural activities, supervised free play, and several activity clubs. High-quality intercollegiate athletic teams and dance performance groups are correlated with other programs of the college. Those majoring in one of the areas within the college find strong professional programs at both the undergraduate and graduate levels.

Community School Regional Center

The center was established in 1968 under a cooperative arrangement between the University and the Mott Foundation. Through this program, workshops are conducted and courses are offered which lead toward a master's degree with emphasis on the administration of community school programs. Consultation services are provided to the school districts of Utah and certain other intermountain states.

Graduate Study

Graduate study in the College of Physical Education has developed into an extensive program. By completing the prescribed requirements, a student may obtain a master's degree in health sciences, recreation education, or physical education. A program leading to the Ed.D. and Ph.D. degree in physical education is also offered. In graduate study, the student may choose from the several options offered in each department.

Free-Play Facilities

Students, faculty members, and staff can use the physical education facilities during the evening and on Saturdays. The college encourages participation in these activities, which provide diversion and afford opportunities for development in enjoyable and wholesome activities.

College of Social Sciences

Martin B. Hickman, Dean (323 KMH)

The following departments and special programs are available in the College of Social Sciences:

Anthropology and Archaeology
Economics
Family and Local History
Geography
Government
History
Psychology
Sociology
Undergraduate Social Work
Western Studies Center
World Affairs

College Advisement Center

Omar Kader, Supervisor (240 KMH)

Advisers stand ready to consult with students in the selection of studies that will contribute most effectively to a broad education and to specialized training in each department.

Purposes

People themselves have always been a most fascinating study—what they have done, what they have thought, what they have said, and how they have reacted to problems confronting them.

The social sciences study activities and relationships of people: their nature, their power to communicate, their environment, what motivates them, how their activities progress, the institutions they have created, and the important social and governmental problems with which they must deal. The social sciences are therefore related disciplines whose purpose is to help people live in the most intelligent and satisfying manner, and they utilize the modern methods of science; controlled observation, laboratory experimentation whenever possible, statistics, and analytical reasoning. Their potential significance for a troubled world is tremendous.

There are two large purposes for which the instructional program of the College of Social Sciences is designed. One is the provision of a broad education, helping those who obtain it to receive in the fullest measure the values found in today's complex civilization and to contribute to the enlargement of those values in an effective, acceptable manner. The other is the preparation of a more limited group as qualified contributors to the discovery of additional truth to add to our present heritage and as capable professional participants in the productive affairs of daily living.

Courses intended to contribute to the first purpose are offered as a service to all students in the University. Career programs for those who choose to do their major work in this college are offered in each department.

THE UNIVERSITY TRADITION

FROM CLASSICAL GREECE TO THE PRESENT

Although originally the term university had nothing to do with the universe, the etymological similarity of these two words has, over the years, created a bond of meaning. A university's special gift is not simply the facts it dispenses, but the love of universal truth that gives meaning both to facts and to the pursuit of learning itself. For education ought never to be an end in itself, but the means to the end for which all universities exist, or have existed. True education produces citizens of the world (whether termed "kalokagathoi," "Renaissance men," or "integrated people"), men and women who incorporate into their lives not only intelligence, sensitivity, and morality, but also "the power to act well in the world's work."

EDUCATION IN ANCIENT GREECE

Greek education originally meant the training of the hero. According to mythology, the young Herakles was taught by Linos, whom he slew in a fit of rage, an episode surprisingly reminiscent of student violence in our own day. The hero Achilles was schooled by the centaur Cheiron, who instructed his young pupil in hunting, healing, and music as well as in rules of moral conduct, which later became famous as *The Maxims of Cheiron.* In another version it was not a centaur, but a human tutor, Phoenix, who taught Achilles "to be a doer of deeds and a speaker of words" (*Iliad* 9.443).

From the beginning, education in Greece was a privilege reserved for the aristocracy and consisted of the training that would produce the *kalokagathos,* the "beautiful and good man" or gentleman. This education was essentially moral and ethical, rather than technical, and enabled a man to function in the cultural life of his city. There were three parts to the education of the young Greek aristocrat: *gymnastike,* or physical education, which included such sports and arts as running, jumping, discus and javelin throwing, wrestling, boxing, horsemanship, chariot racing, and the brutal *pankration*; *musike,* or music, in which the pupil learned to play the flute and the lyre and to sing and dance in the chorus; and *grammatike,* which consisted of learning to read, recite, and appreciate the ancient poets, especially Homer. Although there were no final examinations as we know them, most Greeks were obliged to submit to the rigorous and grueling ordeals of the athletic games and to participate in the dramatic and musical competitions which were held during the great festivals as a part of Greek life. Later, under the democracy in Athens, opportunities for education were extended to more and more citizens. Nevertheless, education always remained a privilege for an elite, since, as Plato noted, "few were prepared to suffer the sacrifice entailed and few could appreciate its advantages."

Linos teaches Iphikles to play the lyre. Skyphos. Iphikles, twin brother of Herakles, was a much better student than his brother. The Greek strong man, having less brain than brawn, lost patience with his studies and took it out on his teacher.

COURTESY OF STAATLICHES MUSEUM SCHWERIN, SCHWERIN

ACADEMIC AMBROSIA

The demise of tyrants and the rise of the Athenian democracy caused a revolution in education. The need for political leaders who could persuade their fellow citizens in the issues discussed in the council and assembly created a demand for a new type of teacher who could train men in the skills of oratory and debate. These teachers (such as Protagoras, Gorgias, and Hippias), called sophists, offered a popular but expensive education that promised political leadership and social success to the ambitious youth of the wealthy aristocratic families. As itinerant professionals, they travelled about the Greek world claiming in public lectures and private tutoring sessions that they could teach their pupils the art of winning any argument through rhetoric. To do this, the student was required to know enough to at least present the appearance of universal knowledge, and so the sophists claimed to provide a complete education.

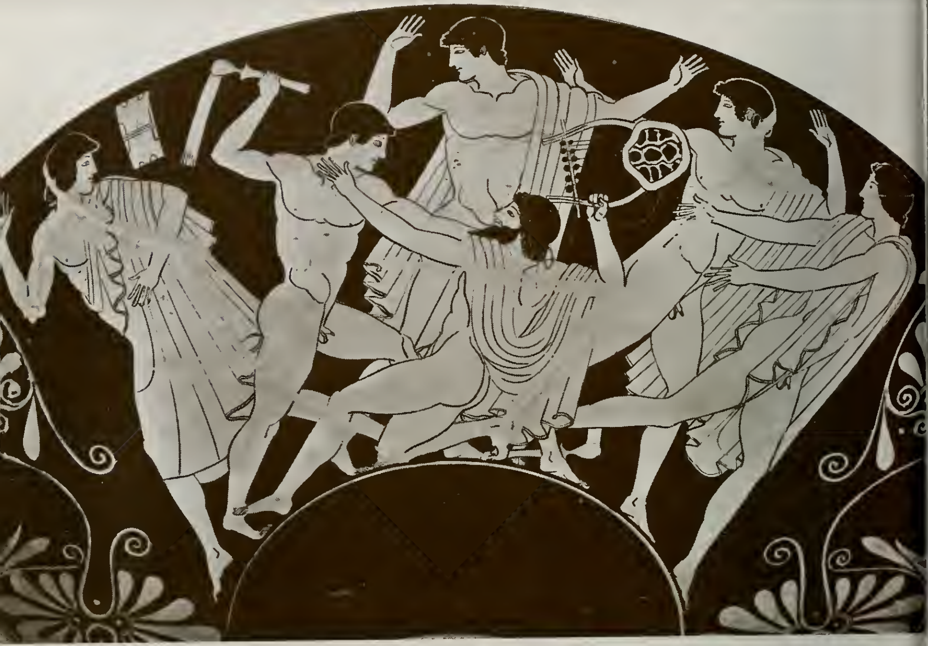
It was Socrates who first challenged the extravagant claim of the sophists to teach political virtue. He rejected their neutrality on moral issues, maintaining that rhetoric was a specious art, not concerned with truth but merely with success and the acquisition of power. For him, education must deal with truth and aim at spiritual perfection. Socrates, COURTESY OF MUSÉE DU LOUVRE, PARIS

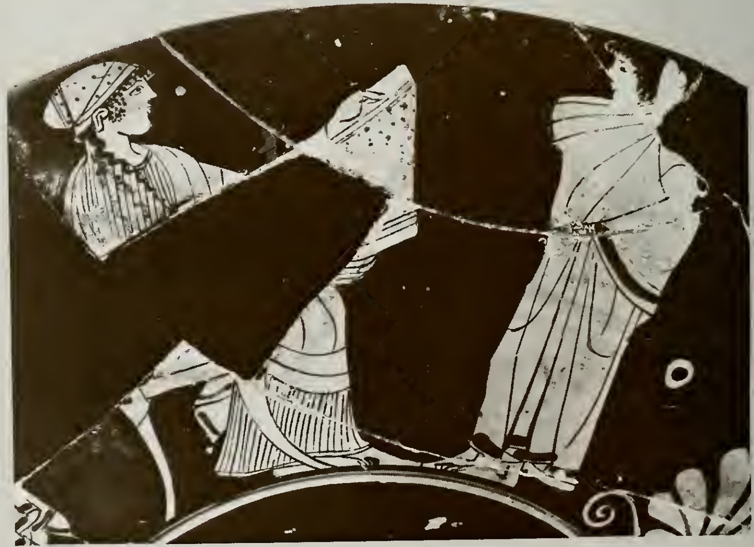
Linos and Mousaios in a recitation lesson. Cup. Mousaios, destined to become a great teacher himself, receives instruction from Linos, mythical educator of heroes such as Herakles.

however, was not an orthodox teacher. In fact, he disclaimed being a teacher at all. His method was a logical investigation by question and answer of such moral and ethical issues as the nature and definition of justice, good, and piety, rather than the transmission of knowledge. Thus, he developed in his pupils a critical attitude and the ability to strip all inconsistencies and false reasoning from any question. This revolutionary intellectual approach in education and his personal association with his pupils were regarded as impious and harmful to the youth of Athens, and Socrates paid for his teachings with his life.

The generation after the sophists and Socrates, advanced education was refined into systems, and two schools arose: Plato's Academy and the intimate circle of disciples around Isocrates. Both were still concerned with training effective political leaders, but they differed fundamentally in philosophy and methods. These rival forms of education persisted for centuries in the Western world. In a way, Isocrates was heir to the rhetorical tradition of the sophists, while Plato developed the ideas of Socrates into a program of political science and philosophy with a strong scientific and mathematical bias. Organizing his school as a religious brotherhood, Plato subjected his students to a long, rigorous course of study emphasizing geometry, astronomy, music, mathematics, and philosophy, and culminating in dialectics. By a progressively restrictive process, Plato chose those who would eventually be initiated into the mysteries of philosophy. Few survived the whole process, which might last until the student was fifty years old. For Plato, the aim of education was not political or social success but the attainment of true virtue, based on philosophical insight. Ideally, this education would produce philosopher-rulers (as in *The Republic*) who would govern for the good of the state. For most Athenians, however, Plato's system was too demanding

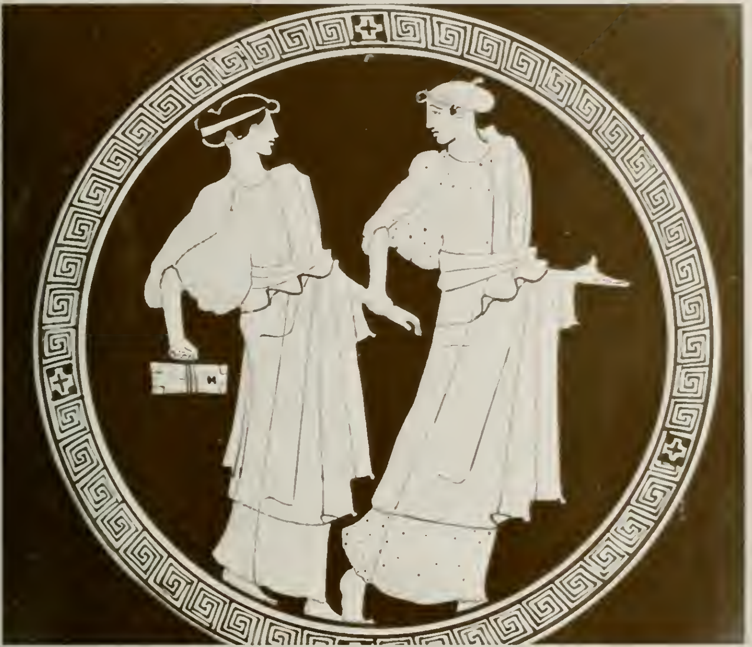
COURTESY OF STAATLICHE ANTIKENSAMMLUNGEN UND GLYPTOTHEK, MUNICH





COURTESY OF ALLARD PIERSON MUSEUM, AMSTERDAM

COURTESY OF THE METROPOLITAN MUSEUM OF ART, NEW YORK, ROGERS FUND, 1906



Top, left: Herakles attacks his master, Linos, with a stool as the class disperses. Cup by Douris.

Bottom, left: woman teacher listens to a boy giving his recitation lesson. Attic red-figure kylix by Sabouroff, shortly after 480 BC

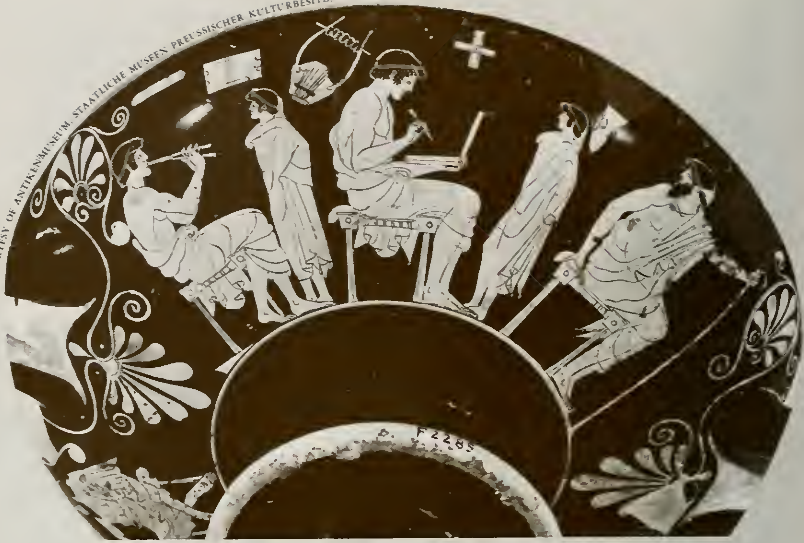
Inside this particular kylix is a Nike, a goddess of victory. The cup was, perhaps, a prize for work at school—Greek education was highly competitive.

Above: a girl being conducted reluctantly to school. Red-figure kylix.

and impractical to have any real impact on the educational practices of the time. Nevertheless, he was successful in training an impressive number of statesmen who became advisers, counselors-of-state, generals, and rulers throughout the Greek world.

Isocrates, on the other hand, largely determined the course ancient Greek education was to take to the end of its history. Although he had been a pupil of Gorgias, he rejected the sophist concepr that the aim of education was mere success. For him, education was the development of practical wisdom and moral character, which was best achieved through humane studies, meaning rhetoric in its highest sense. Isocrates saw moral value in eloquence, and thus speech became all important in his educational sysrem. But he also insisted that his pupils acquire a wide education, thus championing an ideal that can only be characterized as humanism.

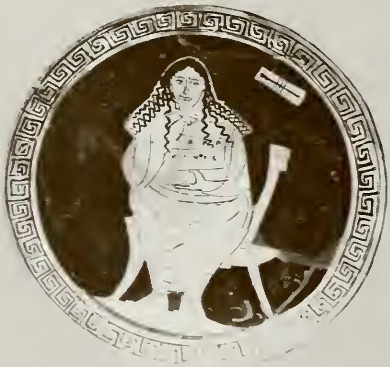
One of the most brilliant educational enterprises in the ancient world was the *Lyceum* or *Peripatos* of Plato's student Aristotle. After twenty years at the Academy as both student and "assistant," Aristotle spent over ten years researching and serving at the courts of rulers, including three years at the Macedonian court as the tutor of the young Alexander. When Alexander became regent, Aristotle returned to Athens, where he founded a school at a shrine of Apollo called the Lyceum. This was a community that had common meals and held a monthly symposium or banquet. And while Aristotle held forth both in lectures and semi-



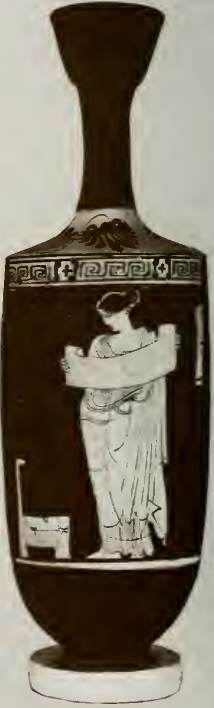
COURTESY OF ANTIKENMUSEUM, STAATLICHE MUSEEN PREUSSISCHER KULTURBESITZ, BERLIN (WEST)

The education of boys. Cup by Douris. Top left, from left to right: flute lesson; writing lesson; paidagogos—the slave who escorted a boy to school and superintended his studies. Schoolroom objects include a scroll, writing tablets (filled with wax), a lyre, and a cross-shaped article thought to be a tuning device or measuring instrument. Top right, left to right: music lesson on lyre; recitation lesson; paidagogos. Schoolroom objects include two drinking cups, two lyres, a book-roll basket, and a flute case.

Women reading. Cup, below; lekythos, right.



COURTESY OF MUSÉE DU LOUVRE, PARIS



COURTESY OF MUSÉE DU LOUVRE, PARIS

narlike sessions, on subjects ranging from zoology to rhetoric, his pupils and assistants, including Theophrastus, Eudemus, and Aristoxenus, conducted research in areas such as botany, the history of philosophy, and music. Aristotle's theories, rediscovered in the Middle Ages along with Platonic philosophy, would have a profound impact on the development of the university.

AMAZONS AND APHRODITES

It is difficult to know to what extent women in ancient Greece received a formal education. Most husbands were satisfied if their wives had been instructed in the skills needed to run the household. In Xenophon's *Oeconomicus*, Ischomachus expresses the expectations most men had for a wife: "She was not yet fifteen when she came to me, and up to that point had lived under the greatest supervision, so that she might see, hear, and say as little as possible. Shouldn't I have been content even if she came only knowing how to take wool, make a cloak, and give out spinning tasks to her maids? For she had been very well trained to control her appetite, and this training I deem is the most important to both men and women." Most Greek women were no doubt taught by their mothers to cook, weave, spin, etc. Nevertheless, it is evident from vase paintings that women of wealthy families, at least, were also taught to read, sing, play a musical instrument, and dance, and even received some physical training–enough to compete in the races in certain festivals such as those of the goddess Hera. Perhaps most sophisticated were the schools organized by Sappho and others for the young women of the island of Lesbos in the first half of the sixth century B.C. Although Sappho's school was a religious fellowship (*thiasos*) dedicated to the Muses, it was in reality more like a finishing school for girls to prepare them for marriage. The emphasis was on cultural education: dancing and music, especially singing and playing the lyre; but attention was also paid to beauty, charm, and fashion. The women were even taught to race. Their accomplishments were displayed in festivals, religious ceremonies, and banquets.

Later, in the Hellenistic period (300-60 B.C.), schools were coeducational. When secondary schools developed during this period, women, at least those of the upper classes who could afford the privilege, attended them. Some women even pursued philosophy, though never rhetoric.

THE ROMAN WAY

WHEN IN ROME . . .

The earliest Romans saw education not so much as an intellectual endeavor but more as a means of inculcating in the young a way of life based on the acceptance of the customs and morals of their ancestors—the *mos maiorum.* A privilege of a rural aristocracy, education taught the practical virtues of hard work, frugality, and severity; how to manage an estate; the principles of warfare; and law. Originally, education was a function of the family, rather than of formal schools. For the first seven years the mother had charge of the young boy or girl and established the basic moral attitudes for the rest of the child's life. While girls remained under the tutelage of their mothers, learning how to manage the home, boys, from the time they were seven until they assumed the *toga virilis* at age sixteen or seventeen, were educated by their fathers. They taught their sons by precept and example, taking them along to the forum, to the *curia,* where the Senate met, and to banquets and festivals where the sons learned proper behavior as well as the various facets of life.

After the young Roman aristocrat had attained citizenship, he was entrusted to the care of an older man, rich in experience and wisdom and usually a friend of the family, under whom, for one or two years, the young man served a kind of apprenticeship, called by the Romans *tirocinium fori,* to prepare him for public life. Here he was taught politics and law. Next, the young Roman went off to the army. After spending one year in the ranks learning obedience, he completed his training as a staff officer, or *tribunus militum,* under the tutorship of an older officer for whose wisdom he had great respect and veneration. The importance of the responsibility of those who directed the education of the young Romans is preserved in the words of Juvenal: *Maxima debetur puero reverentia.* (We should have the greatest respect and reverence for the youth.)

COURTESY OF RHEINISCHES LANDESMUSEUM, TRIER

Neumagen tomb relief of a Roman school scene; 3rd century.
Scrolls of classical poetry provided much of the curriculum in grammar (secondary) schools.

IT'S GREEK TO ME

When Rome came into contact with Greek civilization, Roman aristocrats adopted Greek education for their children. Learned Greeks, often slaves, were hired as tutors for the members of the household, and Romans young and old, such as those in the circle of Scipio, avidly learned and studied Greek language, literature, philosophy, and especially rhetoric

and oratory, seeing the advantages of such fields for the law courts. Only music, art, and competitive athletics failed to find favor in Rome. For the first time Roman education became intellectual. Later, after 119 B.C., it became fashionable for young Romans like Caesar, Cicero, Horace, and others to enhance their education by going to Greece to study philosophy and rhetoric under the great masters at Athens and Rhodes.

With the adoption of Greek education, schools were founded in Rome, although private education by tutors was preferred by many well-to-do families. Boys and girls, accompanied by a slave called a *paedagogus*, attended primary schools run by a *litterator*, where under often brutal methods they learned reading, writing, and arithmetic. Fewer people had the privilege of attending the school of the grammarian (*grammaticus*), the equivalent of our secondary schools, to be taught to read and parse the poets, both Greek and Latin.

The ancient Roman counterpart of a college education was the study of rhetoric. Under the direction of the *rhetor*, a professor of rhetoric and oratory, young Romans declaimed on imaginary subjects to learn the art of persuasion and eloquence. This kind of training often incurred the charge of artificiality and irrelevance to practical life, as the fierce satire of Petronius shows: "I'm sure the reason such young nitwits are produced in our schools is because they have no contact with anything of any use in everyday life. All they get is pirates standing on the beach, dangling manacles, tyrants writing orders for sons to cut off their fathers' heads, oracles advising the sacrifice of three or more virgins during a plague—a mass of sickly sentiments: every word, every move just so much poppycock." Nevertheless, it was rhetoric that equipped the Romans for their careers in law and politics, two areas that are lasting contributions of Roman civilization.

THE RISE OF THE UNIVERSITY

From the sixth century until the end of the Middle Ages, the study of secular subjects was organized around the "seven liberal arts," which were grouped into the *trivium,* consisting of grammar (and literature), rhetoric, and dialectic (logic), and the *quadrivium,* which included mathematics, geometry, astronomy, and music. Though this arrangement of the arts was the basis of the curriculum in monastic and later in cathedral schools, it remained for most of the Middle Ages a model imperfectly realized. In sparse times, when the emphasis fell largely on the rudimentary skills in reading and writing necessary for the discharging of clerical duties, the whole *quadrivium,* for example, was often reduced simply to practice at reckoning the moveable dates in the ecclesiastical calendar. But there were high points: Alcuin's educational reforms under Charlemagne in the eighth and ninth centuries, the remarkable monastic school at Monte Cassino, and, in the eleventh and twelfth centuries, the cathedral school of Chartres.

The enormous influx of knowledge into Europe in the twelfth century—which included texts and translations of Greek and Arabic

Jean Miélot, a scribe, translates the Miracles of Notre Dame into French; 1456 miniature. Monastic scribes engaged in a variety of tasks. They prepared official documents, copied or recopied ancient or contemporary texts, and produced prayerbooks or books of hours for rich patrons. Manuscripts could be consulted in the library; but to prevent stealing (a hand-copied book was a valuable commodity), manuscripts were sometimes chained to the shelves. This is why in many monasteries copyists either worked in the library or in a scriptorium, *a room specially equipped for compiling and copying texts.*

COURTESY OF BIBLIOTHEQUE NATIONALE, PARIS

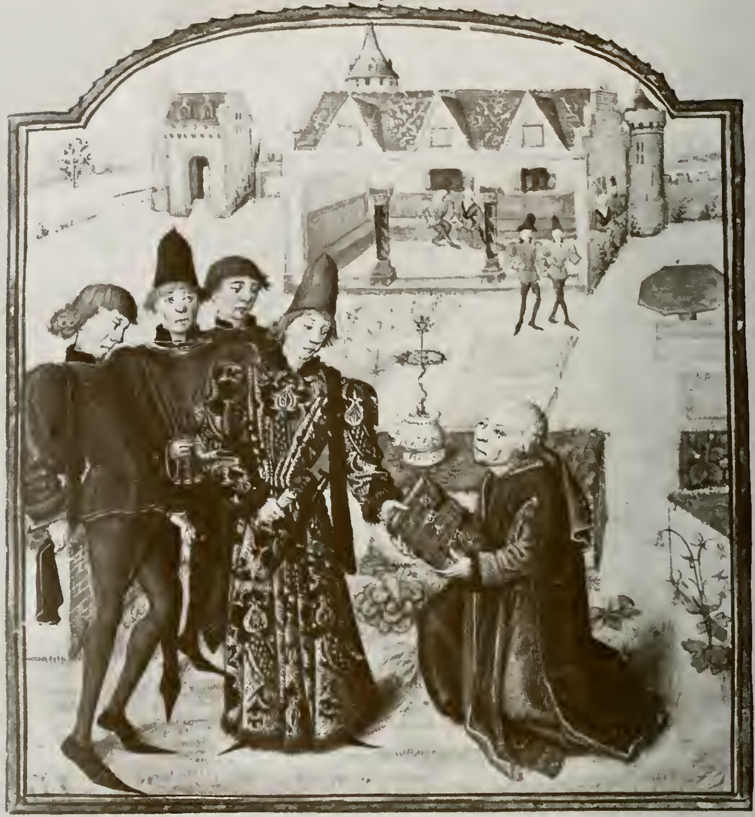
COURTESY OF BIBLIOTHEQUE DE L'ARSENAL, PARIS

A lesson in astronomy. from Breviare de Saint Louis, *13th century.*

The astronomer (center) holds an astrolabe, an instrument for observing the positions of heavenly bodies. He is assisted by a clerk (left) and a mathematician (right).

scientific and philosophical works, as well as the corpus of Roman law—brought about what scholars have called the "Twelfth-Century Renaissance," a burgeoning of learning which underlay the rise of a new institution—the university.

COURTESY OF BIBLIOTHÈQUE DE L'ARSENAL, PARIS



Above: *George Chastelain offers his book to Charles, duke of Bourgogne; from* Instruction d'un Jeune Prince *by G. Chastelain, 15th century.*

Chastelain was a poet-historian. Like most authors of his day, he was supported by the patronage of a wealthy nobleman who commissioned manuscripts and to whom he dedicated his works.

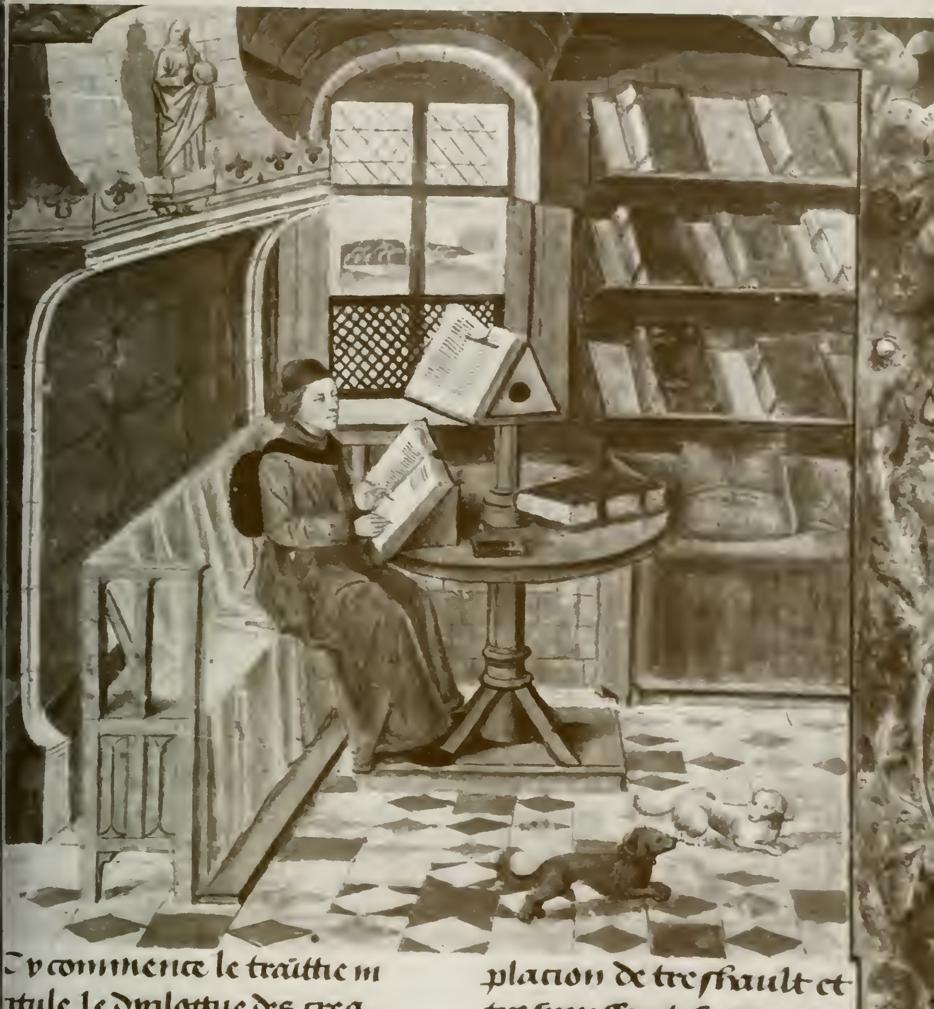
Right: a scholar in his study with his manuscripts, from Dialogue des Creatures, *15th-century Flemish manuscript.*

This intricately illuminated page is a kind of author's preface. The text, in French, begins, "Here commences the treatise entitled the dialogue of the creatures, translated from Latin into French. . . ."

ILLUMINATING THE DARK AGES

The university is a legacy of the Middle Ages. Universities emerged in the twelfth century and stabilized in the thirteenth. A medieval university was called a *studium generale,* that is, a "general school," and was staffed by regent masters (professors) in each of the seven arts and in at least one of the higher disciplines of theology, medicine, or law who were capable of attracting students from distant parts. The term *universitas* (university) referred not to the school itself, but to individual guilds or unions of scholars and students banded together, like

COURTESY OF OSTERREICHISCHE NATIONALBIBLIOTHEK, VIENNA



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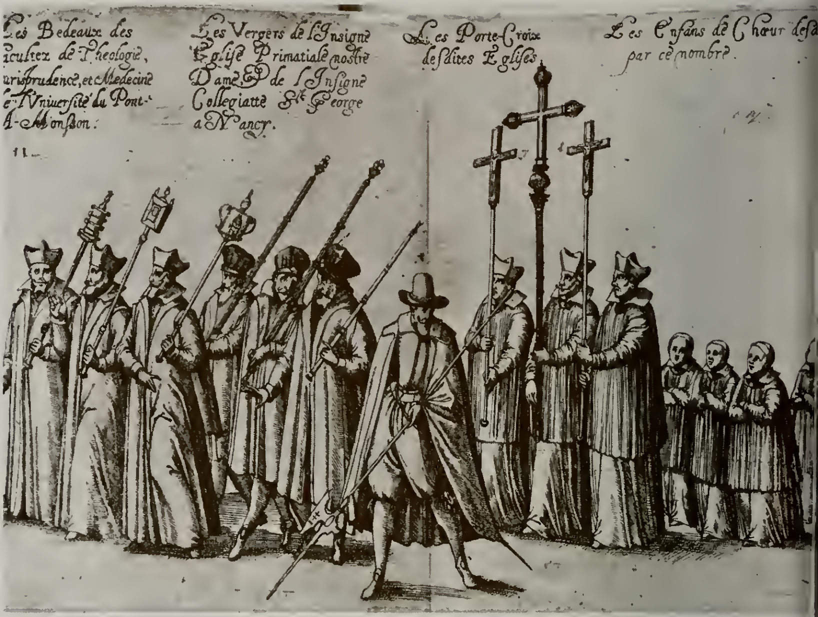
COURTESY OF BIBLIOTHEQUE NATIONALE, PARIS



Procession of the faculty of the University of Pont-à-Mousson in Funérailles d'Henry II, Duc de Lorraine *by Claude de la Ruelle, 16th century. In academic processions the faculties marched in a prescribed order, usually according to seniority of the faculty (theology was almost always first). At the head of this procession are representatives of the faculties of theology, law, and medicine, each carrying a staff symbolic of his profession.*

the trade guilds, for protection of their common interests. Medieval universities were unencumbered by real estate holdings, so whenever disputes arose with townsmen, who objected to price-fixing of rents, etc., the guilds of masters and students usually won by threatening to leave town, thereby depriving the merchants and landlords of profits. Several major universities, including Cambridge, Leipzig, and Padua, originated through such walkouts.

The earliest *studium generale* emerged in the mid-twelfth century in Bologna when masters of canon (ecclesiastical) law and the arts joined existing masters of Roman (civil) law. The university was secular in origin and constitution. Its generally wealthy and mature students formed two "universities" (one for Italians and one for students from beyond the Alps). These two guilds, at first defensive, soon worked together offensively to assure that students had primary control of the affairs of the *studium.* There were no salaried professorships at this time, and teachers, whose livelihood depended on the tuition from individual students, were forced by economic necessity to comply with the students' rules: a master had to deposit a sum of money at the beginning of each year from which fines for violations could be deducted. He could not leave town without permission; he could not skip a lecture or go faster or more slowly than the syllabus prescribed; he had to attract at least five students to a lecture or else he was considered to be absent himself; and if his lectures went overtime, students were obligated to walk out. Official spies (*denunciatores doctorum*) were assigned to report on each master's performance, and if he was found guilty of a serious infraction the master could receive a *privatio* which banned him from teaching and, therefore, from his livelihood.

By contrast, the University of Paris, the most influential university of the Middle

ttez
Les Vicaires deſdites Egliſes, et les Bacheliers de la faculté de Theologie de ſadite Uniuerſité, repreſentez par ce nombre.

Ages, grew out of the cathedral school of Notre Dame. Here the major "university" was a guild of masters of arts and their students, divided by geographical origin into four "nations." This guild bargained collectively against encroachments of local ecclesiastical and secular authorities and against recalcitrant townsmen. Students and masters wore clerical robes (there was even a dress standard forbidding pointed shoes), although many of them did not actually enter the lower orders of the clergy. Whereas Bologna became famous for law, Montpellier for medicine, and Oxford for natural sciences, theology was the queen of disciplines at Paris, where the pope banned the study of civil law in 1229.

THE COLLEGIATE CONCEPT

Medieval colleges, which emerged in Paris in the late twelfth century and developed fully in the thirteenth, were not divisions of a university's faculty and students according to disciplines. A *collegium* was an autonomous, self-governing, legal entity with its own statutes and seal, initially endowed by its founder (usually a king, nobleman, or bishop) for the charitable purpose of providing access to education for students of limited means. Ideally, the college was not conceived of simply as a hostel or dormitory, but as a Christian community engendering spiritual, moral, and academic excellence. Some colleges, especially in Paris, were for beginning grammar students and undergraduates in the arts; others, like the College of the Sorbonne in Paris and the Oxford (e.g., Merton, Balliol) and Cambridge (e.g., Peterhouse, King's Hall) colleges, were for advanced students in the superior disciplines of theology, medicine, and law. Fellows (*socii*) of the colleges, especially in England, regulated their membership, elected their own officers, and hired, with funds from the endowment, teachers in various disciplines to supplement (and sometimes supplant) "ordinary" lecturers in the university.

It is a mistake to equate college and university; colleges did not grant degrees, and only a minority of students resided in them. Southern universities such as Bologna were virtually untouched by the collegiate movement. Whereas colleges are still central to Oxford and Cambridge, those in Paris (there were fifty-seven during the thirteenth to fifteenth centuries) were disrupted by the French Revolution and have never been revived, although the University of Paris now bears the name of its most famous college—the Sorbonne.

STUDENT LIFE: WHAT, ME STUDY?

The popular image of the medieval student is that he (there were no women students *per se,* though many women received substantial education through tutors or convent schools) was a "wandering scholar" who was riot-prone, drunken, and raucous. There were, to be sure, violent "town-gown" conflicts, occasionally resulting in death. Local merchants diluting wine for students was a frequent complaint, but the typical medieval student was, nonetheless, rather sedate and most interested in acquiring the credentials that would permit him to find a secure civic or ecclesiastical position amidst fierce competition.

Though they produced and maintained some of the great thinkers of the Middle Ages, medieval universities were mostly utilitarian and job-oriented in their focus. The study of classical literature and the love of learning for the expansion of the mind, so strongly cultivated at cathedral schools such as Chartres, were overshadowed and slighted by the practical emphasis on gainful employment. This emphasis seemed to many to cheapen the concept of education. John of Garland, for example, wrote in 1241: "If you are a real scholar you are thrust out in the cold. Unless you are a money-maker, I say, you will be considered a fool, a pauper. The lucrative arts, such as law and medicine, are now in vogue, and only those things are pursued which may have a cash value." If this professorial complaint is perennial, so too are the many surviving student letters home begging for money and the practice of hazing freshmen, or "yellow-beaks," as they were called.

Although modern students are frequently dismayed at the price of textbooks and grumble at assigned readings in the reserve library, they would probably not want to trade places with their medieval counterparts, who knew little of libraries and, since printing was not yet invented (to say nothing of Xeroxing), had to rent and copy by hand, or pay a stationer to copy, eight-page segments of the approved copy of the text (*exemplar*) or else do without (which was less easily done then than now). The average age of beginning students ranged from fifteen to seventeen. The only entrance requirement was that the student know Latin, which was the only language he would be permitted to speak during his stay at the university. Students in northern universities enjoyed ecclesiastical immunities as ostensible clerics. They were exempt from trial in civil courts and from taxation and military service.

THE RENAISSANCE

If the university is a legacy of the Middle Ages, it is from the Renaissance that we inherit the formulation of liberal education that has remained substantially the same until within the last generation or so, when undeviating insistence on the value of the classics in general education has been challenged in some quarters, and universities have increasingly reverted to the medieval view of practical, job-oriented training.

Translation of Gaudeamus Igitur
(This is the most popular and well known of all surviving student songs.)

1. Let us, then, rejoice
   While we are young!
   After a youth full of delight and joy,
   After old age's bitterness,
   The earth will have us.

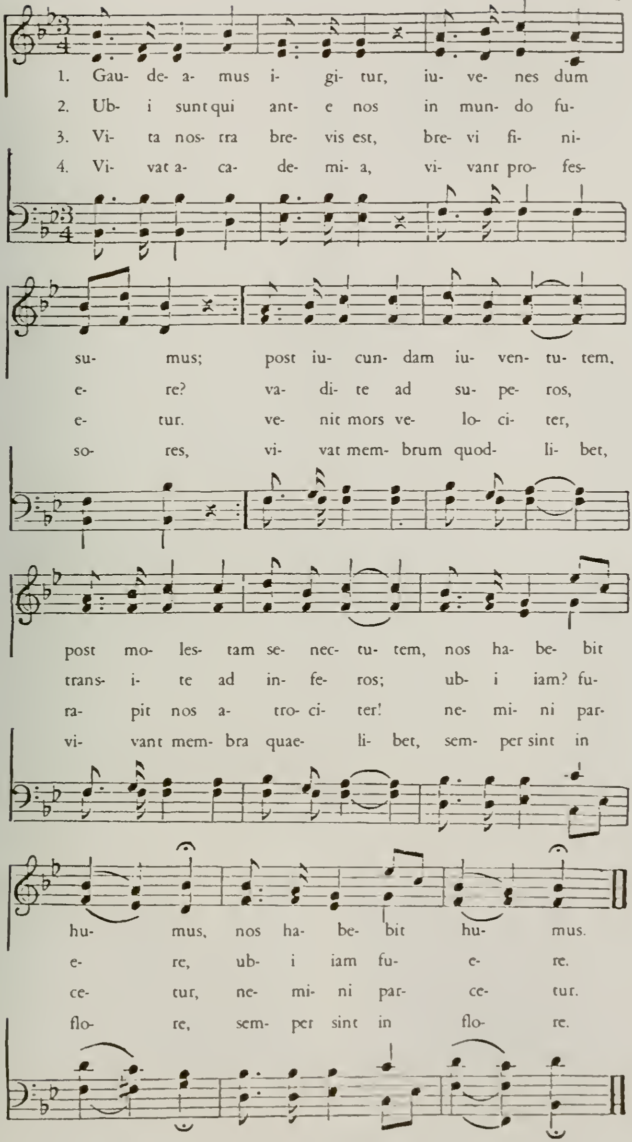
2. Where are they now who
   Lived in the world before us?
   Go search in heaven.
   Go search in hell.
   Where are they now? They are no more.

3. Our life is brief
   And briefly shall be ended.
   Death comes quickly.
   It snatches us cruelly.
   None shall be spared.

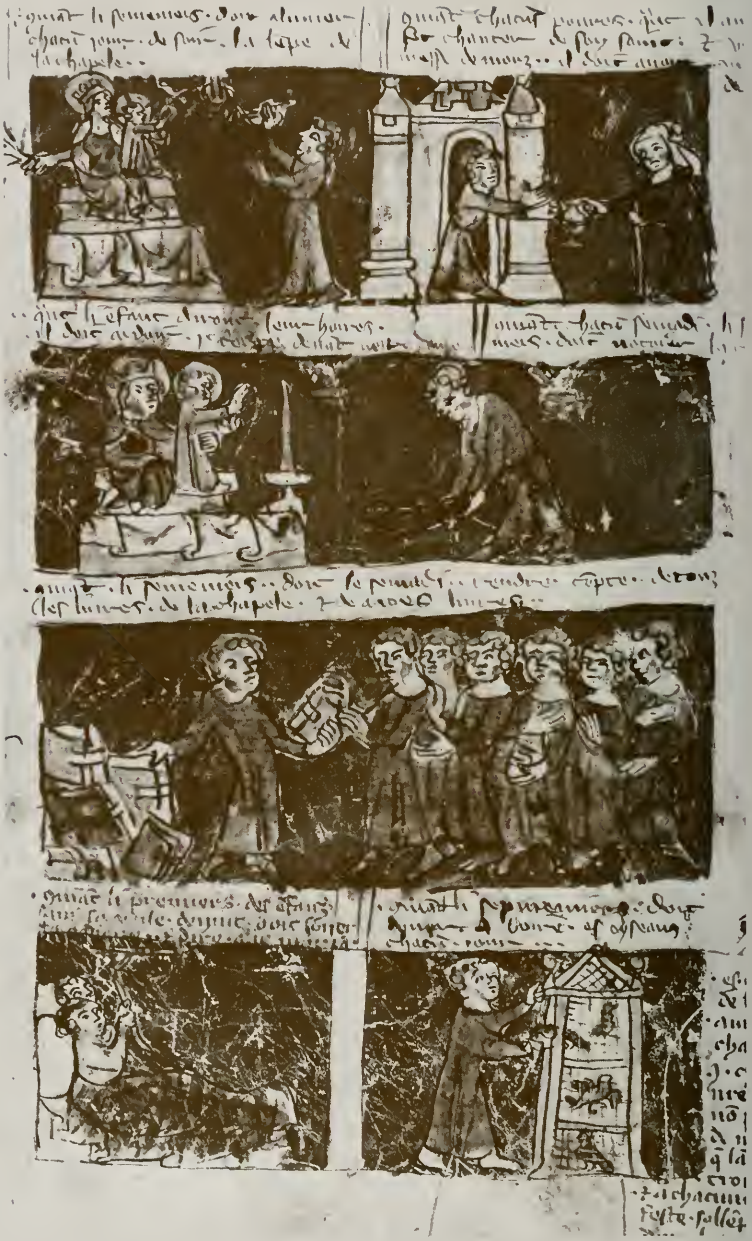
4. Long live our university!
   Long live our kind professors!
   Long live our colleagues!
   Long live each college!
   May they flourish forever!

GAUDEAMUS IGITUR

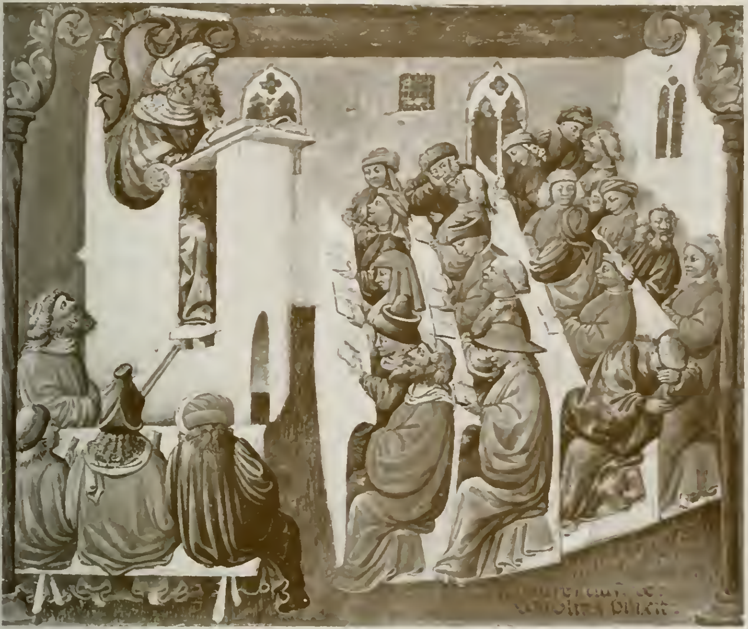
Student Song


1. Gau- de- a- mus i- gi- tur, iu- ve- nes dum
2. Ub- i sunt qui ant- e nos in mun- do fu-
3. Vi- ta nos- tra bre- vis est, bre- vi fi- ni-
4. Vi- vat a- ca- de- mi- a, vi- vant pro- fes-
su- mus; post iu- cun- dam iu- ven- tu- tem,
e- re? va- di- te ad su- pe- ros,
e- tur. ve- nit mors ve- lo- ci- ter,
so- res, vi- vat mem- brum quod- li- bet,
post mo- les- tam se- nec- tu- tem, nos ha- be- bit
trans- i- te ad in- fe- ros; ub- i iam? fu-
ra- pit nos a- tro- ci- ter! ne- mi- ni par-
vi- vant mem- bra quae- li- bet, sem- per sint in
hu- mus, nos ha- be- bit hu- mus.
e- re, ub- i iam fu- e- re.
ce- tur, ne- mi- ni par- ce- tur.
flo- re, sem- per sint in flo- re.

COURTESY OF ARCHIVES NATIONALES, PARIS



COURTESY OF STAATLICHE MUSEEN PREUSSISCHER KULTURBESITZ, KUPFERSTICHKABINETT, BERLIN (WEST), MIN 1233



The humanist educators Vittorino da Feltre (d. 1446), Guarino da Verona (d. 1460), Petrus Paulus Vergerrus (d. 1444), and others were concerned with education of the whole man through "liberal studies"—those studies "which are worthy of a free man . . . by which we attain and practice virtue and wisdom, that education which calls forth, trains and develops those highest gifts of body and mind which ennoble men, and which are rightly judged to rank next to virtue only."

Physical skills—gymnastics, fencing, dancing, etc.—were an integral part of education, but the principal emphasis of formal schooling was on humane letters, that is, classical literature, which the humanist educators asserted had immense practical as well as intellectual value. The humanities, as represented in ancient literature, were the civilizing force of mankind that formed man's moral attitudes, made him an integrated and productive citizen, and taught him duty to God, country, family, and self. This emphasis on "pagan" literature was justified by turning from the dry syllogisms of the late scholastics back to the early Christian Fathers, such as Jerome, Augustine, Clement, and even St. Paul, who not only wrote in Greek or Latin, but quoted the ancient poets and philosophers themselves to reconcile classical concepts with Christian values.

Left: some aspects of student life in the college of Ave Maria at the University of Paris, from Ordonnances de l'Hotel du Roy, *14th century.*
From top: 1) one student lights a chapel lamp while another offers wine to a beggar; 2) a student sweeps the chapel on Saturday; 3) at the end of the week a student hands over library books, some chained, to his successor in the presence of five witnesses (and we think check-out cards are a bothersome precaution!); 4) every morning the first to awake must ring a bell and say a Hail Mary; on the left, a student feeds the college goldfinches.

A lecture in a German university, from a compendium of Aristotle's Nichomachean Ethics *by Frater Henricus de Allemania, 14th century.*
The only thing lacking in this scene, making it differ from a modern classroom episode, is a student reading the Daily Universe.

SHEEPSKINS AND MORTARBOARDS

FAHRENHEIT OR CENTIGRADE?

The origins of academic degrees remain obscure. By the thirteenth century, however, a system of three grades had come into being: the scholar, who attended lectures and could argue on a series of set questions; the bachelor, a student-teacher, of sorts, who was attempting to earn his license to teach; and the master, the highest position in any faculty at this time, who was required to lecture in the university for at least two years after receiving his degree.

Master, doctor, and professor were originally synonymous terms referring to a teacher or a learned man. During the fourteenth century, however, the title of doctor came to be used for the culminating degree in the higher faculties of canon law, civil law, and medicine. Later this title was also used in theology, but its use never spread to the faculty of arts. Most of the candidates for degrees in the higher disciplines of medicine, theology, and law held the Master of Arts degree. Those who did not were required to do remedial work. It took about sixteen years from first enrollment at a university to earn a doctorate in theology.

Even when a bachelor had received his license he was still not free to teach without supervision. At one time a license was all that was required for teaching, but as guilds of masters formed, guild membership became a prerequisite, and entrance requirements stiffened. The licentiate was required to "determine" in a series of disputations for forty days (usually over the period of Lent). The student had not only to demonstrate a comprehensive knowledge of the subject matter and an ability to discourse on it, but he also had to be of good moral character—vouched for by his faculty sponsors (up to eighteen of them). In Vienna in 1449 seventeen of forty-three candidates were failed—all for moral, rather than intellectual shortcomings. At Paris and elsewhere, a student had to take an oath not to take revenge on examiners who failed him.

COURTESY OF BIBLIOTHÈQUE NATIONALE, PARIS

Reception of a doctor; woodcut in a German edition of Cicero's De Officiis, *16th century.*
The cap being placed on the new doctor's head is a symbol of his induction into the guild of masters, the university faculty.

Following a successful determination, the bachelor was inducted into a guild of masters in a ceremony called "inception," during which a cap, symbol of the mastership, was placed on the inceptor's head. Inception was followed by the new master's inaugural lecture (*principium*) and a banquet—a costly affair at the student's expense.

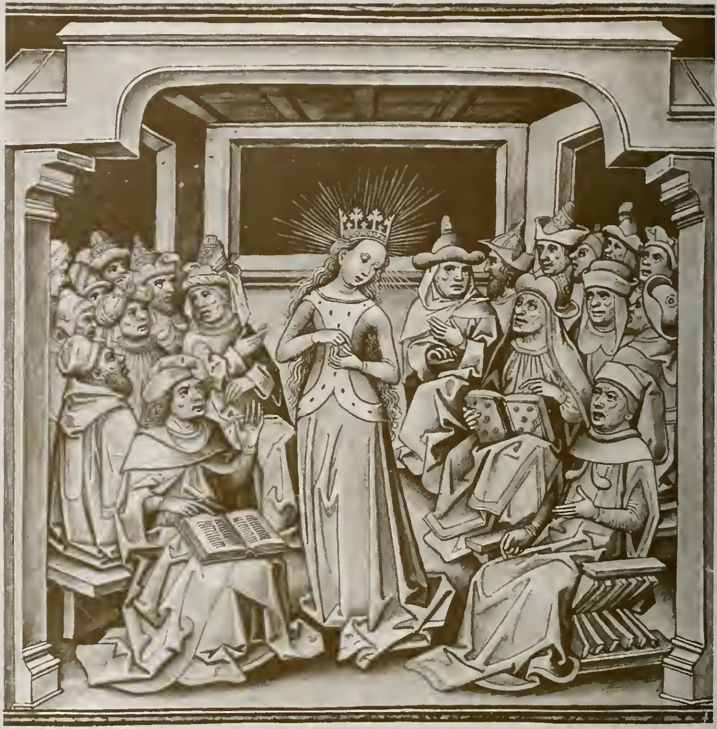
POMP AND CIRCUMSTANCE

Contrary to popular belief, academical dress is not a last vestige of priestly robes of the medieval church. It originated in lay fashions of the Middle Ages and underwent so many modifications through the centuries as fashions changed that today the Middle Ages would never recognize such garb as their own.

In the earliest days of the university, masters and scholars, all of whom held at least minor orders, wore a sober form of dress befitting a secular clerk. But the dress of the secular clergy was not essentially different from that worn by the laity of all classes of society. High to low, everyone wore hoods as a protection from inclement weather; and by about 1450, when it was given up in ordinary dress, the hood was a recognized feature of the academic costume.

The only strictly clerical garment to become academic dress was the *cappa clausa*, a loose cape and hood, usually with a shoulder piece, that had an opening for the head and slits for the arms. Lay teachers (a minority, most often to be found in the faculties of civil law and medicine) also adopted a version of the *cappa*. But as the *cappa* fell into disuse among the clergy in general, it came to be regarded only as academical garb. And by the late fifteenth century, as lay fashion moved

COURTESY OF BIBLIOTHEQUE NATIONALE, PARIS



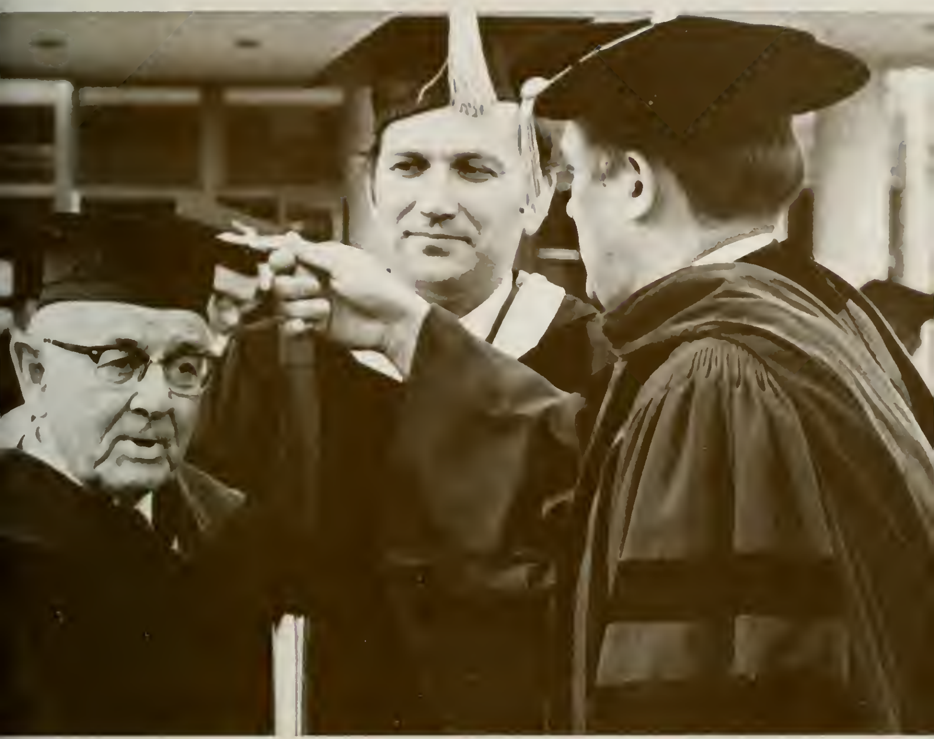
Saint Catherine of Sienna appears before Italian doctors; miniature from La Vie de Sainte Catherine de Sienne, *15th century.*
The disputant on the left with the open book wears a cappa clausa *with shoulder piece. Note the hood on the costume of the bearded gentleman immediately to his left. A wide assortment of headgear, including hats atop hoods, attests to the lack of regulation regarding academical dress in the Middle Ages.*

toward shorter, less cumbersome clothing, academic fashion also abandoned the heavy *cappa,* and the sleeved *tunica* or *roba,* before worn underneath, became the outer garment.

Two much later changes in lay fashion also influenced the development of academical dress. First was the front opening, replacing the hole for the head in the closed gown. The American version of both the master's and doctoral gowns is still worn open, and the practice of facing the opening with fur survives in the decorative facing on the doctoral gown. The second modification was the elaboration and increase in size of the sleeve. Surviving variations include the full bell sleeve on the doctoral gown, the closed oblong sleeve with a slit for the arm on the master's gown, and the wing sleeve of the bachelor's robe.

University statutes regarding academic costume were somewhat vague in the early stages of the university. But by the fourteenth century, all universities were canonizing some modified and specified version of lay fashion as *the* acceptable academic dress. These statutes were periodically adapted to changing fashions. Shape and cut were the essential features. (American universities began nationally standardizing academical dress in 1895.)

The use of color to distinguish faculties was not regulated until the fifteenth century,



President Dallin Oaks (right), wearing the soft academical bonnet and maroon robe of a University of Chicago Doctor of Laws, straightens the tassle on the mortarboard of President Spencer W. Kimball, while Arthur R. Taylor, former president of CBS, looks on. Velvet front facings and matching velvet bars on the sleeves are a typical feature of the modern doctoral gown. Note the full bell sleeves and lining of the hood on President Oaks's robe. Faculty in academic processions now wear the academic dress of the institution granting their highest degree.

but even then it differed among universities. Still, black or white signified the faculty of theology; green, yellow, or blood-red denoted the faculty of medicine; and blue, in various shades, usually indicated the faculty of philosophy. Scarlet was reserved for canon law.

Nowadays, the hood is bordered with a color denoting the field of the degree (arts–white, science–golden yellow, philosophy–blue, law–purple). The width of this border and the length of the hood indicate the level of the degree (bachelor's, master's, doctorate). The hood is lined with silk or a comparable material of a color indicating the degree-granting institution.

The academical bonnet, a full, loose headdress on the order of a baggy beret, was derived from a fifteenth-century French fashion. The more common "mortarboard" was an English modification of a soft, square bonnet introduced to Paris about 1520 from Italy, itself a variation of the *pileus*, a clerical headdress adopted by the church in 1311 to be worn by the clergy "after the manner of laymen" who had originated the fashion.

Source: Hargreaves-Mawdsley, W. N. *A History of Academical Dress in Europe until the End of the Eighteenth Century*. London: Oxford University Press, 1963.

THE UNIVERSITY IN AMERICA

BRAINCHILD IN THE PROMISED LAND

One of the first acts of the Massachusetts colonizers was to found a university. The founders of Harvard College (1636) took for granted the continuity of Western education. Their college in colonial America was the direct descendant of the Hebrew schools of the prophets through the Academy of Athens, Aristotle's Lyceum, the Palace School of Charlemagne, the medieval universities, and the enlightened academies of the Reformation. As the direct heirs of the apostles and prophets, these men felt a sacred obligation to keep the torch of learning aflame in the New World.

Christianity was the foundation of the whole educational system, and all of the early colleges were controlled by denominations. But these institutions were not set up solely as religious seminaries to train ministers. Public officials and professional men in all fields could benefit from a classical and moral education.

The value of the university in a wild, new land could not be underestimated. A learned clergy and literate laity were essential to the establishment of government and order. A university could advance learning, combat ignorance and barbarism, and instruct in the virtues of loyalty, citizenship, and faith. The moral foundation of this education is stressed in the early rules of Harvard, in which the college's chief aim is that "Every one shall consider the Mayne End of his life & studyes, to know God & Jesus Christ, which is Eternall life." Yale's entrance requirements of 1745 included the following: "That none may Expect to be admitted into this College unless upon Examination of the Praesident and Tutors, They shall be found able Extempore to Read, Construe and Parse Tully, Virgil, and the Greek Testament: and to write True Latin Prose and to understand the Rules of Prosodia, and Common Arithmetic, and shall bring Sufficient Testimony of his Blameless and inoffensive Life."

The American universities were modeled on European institutions, particularly those in England and Scotland. However, the immensity of the New World and the relative poverty of its inhabitants made the development of a large collection of residential colleges, like Oxford or Cambridge, impossible. Instead, there developed widely separated degree-granting institutions: Harvard (1636), William and Mary (1693), Yale (1701), and Princeton (1746).

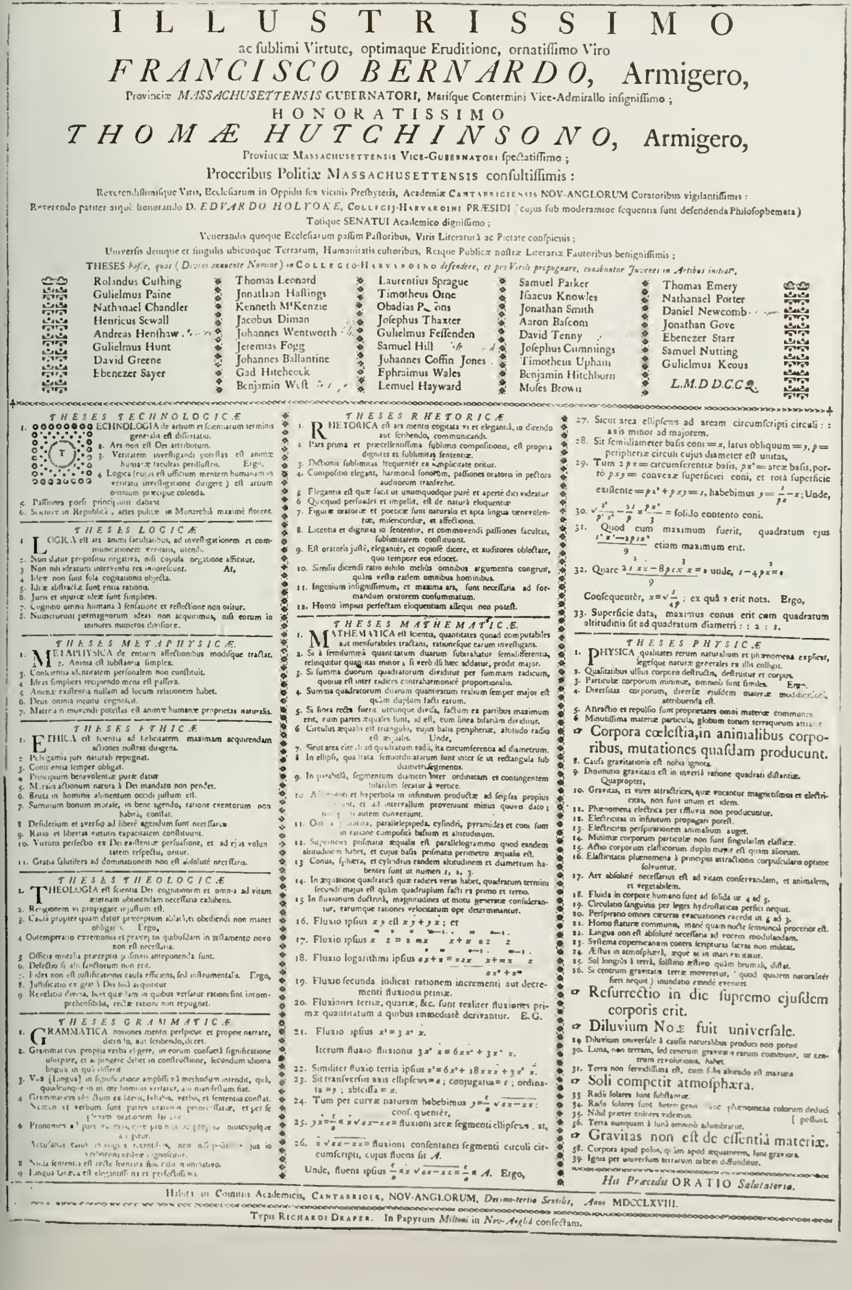
In some ways the American university was a last bastion of scholasticism. The curriculum harked back to the medieval seven liberal arts, plus the Renaissance emphasis on literature and classics. Latin and Greek were entrance requirements, and the study of Hebrew, syllogistically proven to be the language of the angels, received strong encouragement. A rigid four-year program led to the bachelor's degree.

But there was no ban on "new learning." Copernican astronomy was widely taught–Harvard even owned a telescope. And by the early eighteenth century the philosophies of Locke and Descartes and the theories of Newton had received such support that the heretofore inflexible curriculum was altered to include more mathematics and natural science, as well as English literature and modern foreign languages.

By the end of the seventeenth century colleges were moving away from clerical administration. New colleges were being founded by lay members of the community. In fact, to attract enrollment the religious institutions dropped doctrinal religious examinations as part of the entrance requirement. And while William and Mary still continued to turn out Anglican ministers, its emphasis had shifted in other areas from producing pious laymen to training young men "to become Gentlemen," anticipating the philosophy of Cardinal Newman's treatise, *The Idea of a University.*

Thesis sheet from Harvard University, 1768. An early commencement requirement, the theses were topics in a variety of fields (ethics, mathematics, grammar, physics, etc.) upon which graduating seniors were required to be able to discourse. Note the degree to which the Latin terminology of the theses has been adopted into modern English vocabulary.

COURTESY OF HARVARD UNIVERSITY ARCHIVES, CAMBRIDGE



ILLUSTRISSIMO

ac ſublimi Virtute, optimaque Eruditione, ornatiſſimo Viro
FRANCISCO BERNARDO, Armigero,
Provinciæ *MASSACHUSETTENSIS* GUBERNATORI, Mariſque Contermini Vice-Admirallo inſigniſſimo;
HONORATISSIMO
THOMÆ HUTCHINSONO, Armigero,
Provinciæ MASSACHUSETTENSIS VICE-GUBERNATORI ſpectatiſſimo;
Proceribus Politiæ MASSACHUSETTENSIS conſultiſſimis:
Reverendiſſimiſque Viris, Eccleſiarum in Oppidis ſeu vicinis Preſbyteris, Academiæ CANTABRIGIENSIS NOV-ANGLORUM Curatoribus vigilantiſſimis:
Reverendo pariter atquè honorando D. *EDVARDO HOLYOKE*, COLLEGIJ-HARVARDINI PRÆSIDI (cujus ſub moramine ſequentia ſunt defendenda Philoſophemata)
Totique SENATUI Academico digniſſimo;
Venerandis quoque Eccleſiarum paſſim Paſtoribus, Viris Literaturâ ac Pietate conſpicuis;
Univerſis denique et ſingulis ubicunque Terrarum, Humanitatis cultoribus, Reique Publicæ noſtræ Literariæ Fautoribus benigniſſimis;
THESES *haſce, quas* (*Divino annuente Numine*) *in* COLLEGIO-HARVARDINO *defendere, et pro Viribus propugnare, conabuntur Juvenes in Artibus initiati*,

Rolandus Cuſhing
Gulielmus Paine
Nathanael Chandler
Henricus Sewall
Andreas Henſhaw
Gulielmus Hunt
David Greene
Ebenezer Sayer

Thomas Leonard
Jonathan Haſtings
Kenneth M^cKenzie
Jacobus Diman
Johannes Wentworth
Jeremias Fogg
Johannes Ballantine
Gad Hitchcock
Benjamin Weſt

Laurentius Sprague
Timotheus Orne
Obadias P ons
Joſephus Thaxter
Gulielmus Feſſenden
Samuel Hill
Johannes Coffin Jones
Ephraimus Wales
Lemuel Hayward

Samuel Parker
Iſaacus Knowles
Jonathan Smith
Aaron Baſcom
David Tenny
Joſephus Cummings
Timotheus Upham
Benjamin Hitchborn
Moſes Brown

Thomas Emery
Nathanael Porter
Daniel Newcomb
Jonathan Gove
Ebenezer Starr
Samuel Nutting
Gulielmus Keous

L.M.D D.C.C.Q.

THESES TECHNOLOGICÆ

1. TECHNOLOGIA de artium et ſcientiarum terminis generalis eſt diſſertatio.
2. Ars non eſt Dei attributum.
3. Veritatem inveſtigandi poteſtas eſt animæ humanæ facultas perilluſtris. Ergo,
4. Logica (cujus eſt officium mentem humanam in veritatis inveſtigatione dirigere) eſt artium omnium præcipue colenda.
5. Paſſiones poeſi principium dabant.
6. Scientiæ in Republicâ, artes politæ in Monarchiâ maximè florent.

THESES LOGICÆ

1. LOGICA eſt ars animi facultatibus, ad inveſtigationem et communicationem veritatis, utendi.
2. Non datur propoſitio negativa, niſi copula negatione afficitur.
3. Non niſi idearum interventu res innoteſcunt. At,
4. Ideæ non ſunt ſola cogitationis objecta.
5. Ideæ abſtractæ ſunt entia rationis.
6. Juris et injuriæ ideæ ſunt ſimplices.
7. Cognitio omnis humana à ſenſatione et reflectione non oritur.
8. Numerorum permagnorum ideas non acquirimus, niſi eorum in minores numeros diviſione.

THESES METAPHYSICÆ.

1. METAPHYSICA de entium affectionibus modiſque tractat.
2. Anima eſt ſubſtantia ſimplex.
3. Conſcientia identitatem perſonalem non conſtituit.
4. Ideas ſimplices recipiendo mens eſt paſſiva.
5. Animæ exiſtentia nullam ad locum relationem habet.
6. Deus omnia intuitu cognoſcit.
7. Materiam movendi poteſtas eſt animæ humanæ proprietas naturalis.

THESES ETHICÆ

1. ETHICA eſt ſcientia ad felicitatem maximam acquirendam actiones noſtras dirigens.
2. Polygamia juri naturali repugnat.
3. Conſcientia ſemper obligat.
4. Principium benevolentiæ puræ datur.
5. Moralis actionum natura à Dei mandato non pendet.
6. Bruta in hominis alimentum occidi juſtum eſt.
7. Summum bonum morale, in bene agendo, ratione eventorum non habitâ, conſtat.
8. Deſiderium et averſio ad liberè agendum ſunt neceſſaria.
9. Ratio et libertas virtutis capacitatem conſtituunt.
10. Virtutis perfectio ex Dei exiſtentiæ perſuaſione, et ad ejus voluntatem reſpectu, oritur.
11. Gratia ſalutifera ad dominationem non eſt abſolutè neceſſaria.

THESES THEOLOGICÆ

1. THEOLOGIA eſt ſcientia Dei cognitionem et omnia ad vitam æternam obtinendam neceſſaria exhibens.
2. Religionem vi propagare injuſtum eſt.
3. Causâ propter quam datur præceptum ablatâ, et obediendi non manet obligatio. Ergo,
4. Obtemperatio cæremoniis et præceptis quibuſdam in teſtamento novo non eſt neceſſaria.
5. Officia moralia præceptis poſitivis anteponenda ſunt.
6. Defectio finalis ſanctorum non erit.
7. Fides non eſt juſtificationis cauſa efficiens, ſed inſtrumentalis. Ergo,
8. Juſtificatio ex gratiâ Dei ſolâ acquiritur.
9. Revelatio divina, licet quædam in quibus verſatur rationi ſint incomprehenſibilia, rectæ rationi non repugnat.

THESES GRAMMATICÆ

1. GRAMMATICA notiones mentis perſpicue et propriè narrare, dicendo, aut ſcribendo, docet.
2. Grammaticus propria verba eligere, in eorum conſuetâ ſignificatione uſurpare, et adjungere debet in conſtructione, ſecundum idioma linguæ in quâ differit.
3. Vox [Lingua] in ſignificatione ampliſſimâ methodum intendit, quâ, qualecunque in mente hominis verſatur, aliis manifeſtum fiat.
4. Grammatices ſubjectum ex literis, ſyllabis, verbis, et ſententiis conſtat.
5. Nomen et verbum ſunt partes orationis perneceſſariæ, et per ſe plenam orationem faciunt.
6. Pronomen ad [illegible] pro [illegible] uniuſcujuſque [illegible]
7. Accuſativus caſus in linguis recentibus, non niſi poſitione ſua in ſermonum ordine cognoſcitur.
8. Nulla ſententia eſt rectè formata ſine caſu nominativo.
9. Lingua Græca eſt elegantiſſima et perfectiſſima.

THESES RHETORICÆ

1. RHETORICA eſt ars mentis cogitata vi et elegantiâ, in dicendo aut ſcribendo, communicandi.
2. Pars prima et præcellentiſſima ſublimis compoſitionis, eſt propria dignitas et ſublimitas ſententiæ.
3. Dictionis ſublimitas frequentèr ex ſimplicitate oritur.
4. Compoſitio elegans, harmoniâ ſonorum, paſſiones oratoris in pectora auditorum transfert.
5. Elegantia eſt quæ facit ut unumquodque purè et apertè dici videatur.
6. Quicquid perſuadet et impellit, eſt de naturâ eloquentiæ.
7. Figuræ oratoriæ et poeticæ ſunt naturalis et apta lingua benevolentiæ, miſericordiæ, et affectionis.
8. Licentia et dignitas in ſententiis, et commovendi paſſiones facultas, ſublimitatem conſtituunt.
9. Eſt oratoris juſtè, elegantèr, et copioſè dicere, et auditores oblectare, quo tempore eos edocet.
10. Similis dicendi ratio nihilo meliùs omnibus argumentis congruit, quàm veſtis eadem omnibus hominibus.
11. Ingenium inſigniſſimum, et maxima ars, ſunt neceſſaria ad formandum oratorem conſummatum.
12. Homo impius perfectam eloquentiam aſſequi non poteſt.

THESES MATHEMATICÆ.

1. MATHEMATICA eſt ſcientia, quantitates quoad computabiles aut menſurabiles tractans, rationeſque earum inveſtigans.
2. Si à ſemiſummâ quantitatum duarum ſubtrahatur ſemidifferentia, relinquitur quantitas minor; ſi verò illi hæc addatur, prodit major.
3. Si ſumma duorum quadratorum dividitur per ſummam radicum, quotus eſt inter radices contraharmonicè proportionalis.
4. Summa quadratorum duarum quantitatum realium ſemper major eſt quàm duplum facti earum.
5. Si linea recta fuerit utcunque diviſa, factum ex partibus maximum erit, cum partes æquales ſunt, id eſt, cum linea bifariàm dividitur.
6. Circulus æqualis eſt triangulo, cujus baſis peripheriæ, altitudo radio eſt æqualis. Unde,
7. Sicut area circuli ad quadratum radii, ita circumferentia ad diametrum.
8. In ellipſi, quadrata ſemiordinatarum ſunt inter ſe ut rectangula ſub diametri ſegmentis.
9. In parabolâ, ſegmentum diametri inter ordinatam et contingentem bifariàm ſecatur à vertice.
10. Aſymptoti et hyperbola in infinitum productæ ad ſeipſas propius accedunt, et ad intervallum proveniunt minus quovis dato; nunquam autem conveniunt.
11. Omnia priſmata, parallelepipeda, cylindri, pyramides et coni ſunt in ratione compoſitâ baſium et altitudinum.
12. Superficies priſmatis æqualis eſt parallelogrammo quod eandem altitudinem habet, et cujus baſis priſmatis perimetro æqualis eſt.
13. Conus, ſphæra, et cylindrus eandem altitudinem et diametrum habentes ſunt ut numeri 1, 2, 3.
14. In æquatione quadraticâ quæ radices veras habet, quadratum termini ſecundi majus eſt quàm quadruplum facti ex primo et tertio.
15. In fluxionum doctrinâ, magnitudines ut motu generatæ conſiderantur, earumque rationes velocitatum ope determinantur.
16. Fluxio ipſius xy eſt $x\dot{y}+y\dot{x}$; et
17. Fluxio ipſius $x^m z^n = z^n m x^{m-1}\dot{x} + x^m n z^{n-1}\dot{z}$
18. Fluxio logarithmi ipſius $ax^n+x^m = \frac{nax^{n-1}\dot{x}+mx^{m-1}\dot{x}}{ax^n+x^m}$
19. Fluxio ſecunda indicat rationem incrementi aut decrementi fluxionis primæ.
20. Fluxiones tertiæ, quartæ, &c. ſunt realiter fluxiones primæ quantitatum a quibus immediatè derivantur. E.G.
21. Fluxio ipſius $x^3 = 3x^2\dot{x}$.

Iterum fluxio fluxionis $3x^2\dot{x} = 6x\dot{x}^2 + 3x^2\ddot{x}$.

22. Similiter fluxio tertia ipſius $x^3 = 6\dot{x}^3 + 18x\dot{x}\ddot{x} + 3x^2\dddot{x}$.
23. Sit tranſverſus axis ellipſeωs $=a$; conjugatus $=c$; ordinata $=y$; abſciſſa $=x$.
24. Tum per curvæ naturam habebimus $y=\frac{c}{a}\sqrt{ax-xx}$: conſequentèr,
25. $y\dot{x}=\frac{c}{a}\times\dot{x}\sqrt{ax-xx}$ = fluxioni areæ ſegmenti ellipſeωs. at,
26. $\dot{x}\sqrt{ax-xx}$ = fluxioni conſentanei ſegmenti circuli circumſcripti, cujus fluens ſit A.

Unde, fluens ipſius $\frac{c}{a}\times\dot{x}\sqrt{ax-xx} = \frac{c}{a}\times A$. Ergo,

27. Sicut area ellipſeωs ad aream circumſcripti circuli : : axis minor ad majorem.
28. Sit ſemidiameter baſis coni $=x$, latus obliquum $=y$, $p=$ peripheriæ circuli cujus diameter eſt unitas,
29. Tum $2px$ = circumferentiæ baſis, px^2 = areæ baſis, portò pxy = convexæ ſuperficiei coni, et totâ ſuperficie exiſtente $=px^2+pxy=s$, habebimus $y=\frac{s}{px}-x$; Unde,
30. $\sqrt{\frac{s^2}{p^2x^2}-\frac{2s}{p}}\times\frac{px^2}{3}$ = ſolido contento coni.
31. Quod cum maximum fuerit, quadratum ejus $\frac{s^2x^2-2psx^4}{9}$ etiam maximum erit.
32. Quare $\frac{2s^2x\dot{x}-8psx^3\dot{x}}{9}=0$ unde, $s-4px^2=0$.

Conſequentèr, $x=\sqrt{\frac{s}{4p}}$; ex quâ y erit nota. Ergo,

33. Superficie data, maximus conus erit cum quadratum altitudinis ſit ad quadratum diametri : : 2 : 1.

THESES PHYSICÆ

1. PHYSICA qualitates rerum naturalium et phænomena explicat, legeſque naturæ generales ex illis colligit.
2. Qualitatibus ullius corporis deſtructis, deſtruitur et corpus.
3. Particulæ corporum minimæ, omninò ſunt ſimiles. Ergo,
4. Diverſitas corporum, diverſæ ejuſdem materiæ modificationi, attribuenda eſt.
5. Attractio et repulſio ſunt proprietates omni materiæ communes.
6. Minutiſſima materiæ particula, globum totum terraqueum attrahit.

☞ Corpora cœleſtia, in animalibus corporibus, mutationes quaſdam producunt.

8. Cauſa gravitationis eſt nobis ignota.
9. Diminutio gravitatis eſt in inverſâ ratione quadrati diſtantiæ. Quapropter,
10. Gravitas, et vires attractrices, quæ vocantur magnetiſmus et electricitas, non ſunt unum et idem.
11. Phænomena electrica per effluvia non producuntur.
12. Electricitas in infinitum propagari poteſt.
13. Electricitas perſpirationem animalium auget.
14. Minimæ corporum particulæ non ſunt ſingulatim elaſticæ.
15. Actio corporum elaſticorum duplo major eſt quàm aliorum.
16. Elaſticitatis phænomena à principiis attractionis corpuſcularis optime ſolvuntur.
17. Aer abſolutè neceſſarius eſt ad vitam conſervandam, et animalem, et vegetabilem.
18. Fluida in corpore humano ſunt ad ſolida ut 4 ad 5.
19. Circulatio ſanguinis per leges hydroſtaticas perfici nequit.
20. Perſpiratio omnes cæteras evacuationes excedit ut 5 ad 3.
21. Homo ſtaturæ communis, manè quàm nocte ſemunciâ procerior eſt.
22. Lingua non eſt abſolutè neceſſaria ad vocem modulandam.
23. Syſtema copernicanum contra ſcripturas ſacras non militat.
24. Æſtus in atmoſphærâ, æque ac in mari excitantur.
25. Sol longiùs à terrâ, ſolſtitio æſtivo quàm brumali, diſtat.
26. Si centrum gravitatis terræ moveretur, (quod quidem naturalitèr fieri nequit) inundatio exindè eveniret.

☞ Reſurrectio in die ſupremo ejuſdem corporis erit.

☞ Diluvium Noæ fuit univerſale.

29. Diluvium univerſale à cauſis naturalibus produci non potuit.
30. Luna, non terram, ſed centrum gravitatis earum commune, ut centrum revolutionis, habet.
31. Terra non ferventiſſima eſt, cum Solis altitudo eſt maxima.

☞ Soli competit atmoſphæra.

33. Radii ſolares ſunt ſubſtantiæ.
34. Radii ſolares ſunt heterogenei unde phænomena colorum deduci poſſunt.
35. Nihil præter colores videmus.
36. Terra nunquam à lunâ omninò adumbratur.

☞ Gravitas non eſt de eſſentiâ materiæ.

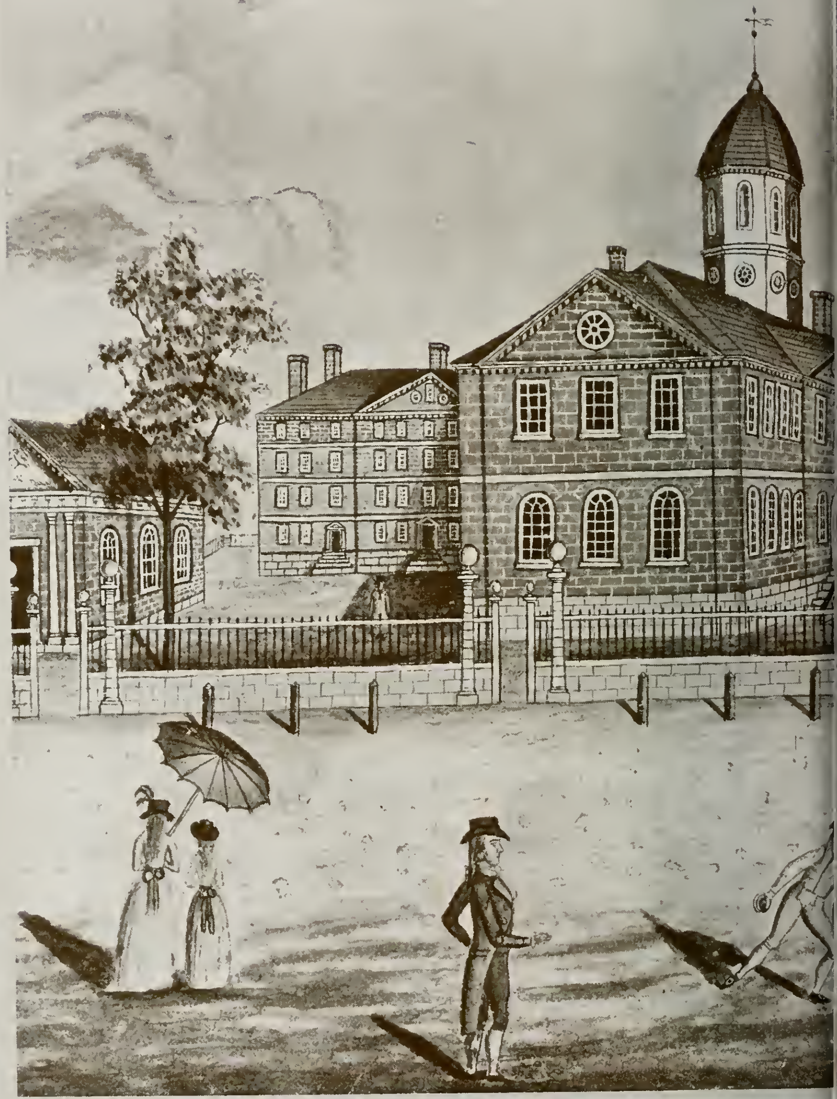
38. Corpora apud polos, quàm apud æquatorem, ſunt graviora.
39. Ignis per univerſum terrarum orbem diffunditur.

His Præcedit ORATIO *Salutatoria*.

Habita in Comitiis Academicis, CANTABRIGIÆ, NOV-ANGLORUM, *Decimo-tertio Sextilis, Anno* MDCCLXVIII.

Typis RICHARDI DRAPER. In Papyrum *Miltoni* in *Nov-Angliâ* confectam.

COURTESY OF HARVARD UNIVERSITY ARCHIVES, CAMBRIDGE



Harvard College in 1795. The gentlemen in the foreground are playing an early version of cricket.

BRIGHAM YOUNG UNIVERSITY

A UNIQUE PERSPECTIVE

Brigham Young University began in 1875 with the same educational vision that accompanied the founding of the universities of colonial America. "All truth is the offspting of heaven, and is incorporated in the religion which we have embraced," said Brigham Young. "Every accomplishment, every grace, every useful attainment in mathematics, in all science and art belong to the Saints and they should avail themselves as expeditiously as possible of the wealth of knowledge the sciences offer to the diligent and persevering scholar."

BYU shares with the tradition of Western education the concept that all men, and society as well, can benefit from a liberal and moral education. And these two components are both essential to the truly integrated man. President Dallin Oaks said, "In our view, education without religion would be as incomplete as narrow vocational training without accompanying exposure to the humanities."

In an age of specialization, Brigham Young University still speaks for the whole man, the *kalokagathos* of the Greeks. "We do not want BYU ever to become an educational factory," said President Spencer W. Kimball. "It must concern itself with not only the dispensing of facts, but with the preparation of its students to take their place in society as thinking, thoughtful, and sensitive individuals."

As many universities have abandoned their special mission to lift the behavior and morality of their students, BYU has remained true to its double heritage: the intellectual traditions of the Western world, and its spiritual heritage from heaven.

"Education on this campus deliberately and persistently concerns itself with 'education for eternity,' not just for time," President Kimball has said, adding, "This University shares with other universities the hope and the labor involved in rolling back the frontiers of knowledge even further, but we also know that through the process of revelation there are yet 'many great and important things' to

Benjamin Cluff, Jr., who organized the Normal College at Brigham Young Academy, instructs this 1898 class in the theory of teaching.

COURTESY OF BRIGHAM YOUNG UNIVERSITY ARCHIVES, PROVO

Firmly in the philosophical tradition of Western education that views knowledge as a means, not an end in itself, the motto on the portals of Brigham Young University reads, "Enter to learn. Go forth to serve."

be given to mankind which will have an intellectual and spiritual impact far beyond what mere men can imagine. Thus, at this University among faculty, students, and administration, there is and must be an excitement and an expectation about the very nature and future of knowledge that underwrites the uniqueness of BYU."

· In its commitment to the intellectual as well as the spiritual nature of education, Brigham Young University remains true to the university heritage, adding its unique perspective of "education for eternity."

ACKNOWLEDGMENTS

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List of Courses

Semester System. Courses of study at Brigham Young University are offered, and credit for satisfactory completion is granted, on a semester basis.

Course Numbering System. Level of instruction of courses is shown by the numbers assigned:

Course Number	Type of Course
1 to 99	Preparatory and remedial (noncredit)
100 to 299	Lower-division
300 to 499	Upper-division
500 to 599	Advanced undergraduate or graduate
600 to 799	Graduate

Credit-Hour Designations. The three-number code which appears in parentheses immediately after each course title has the following significance:

First number	Semester hours of credit
Second number	Class hours of lecture, recitation, or seminar meeting per week or Minimum hours of individual study required per week
Third number	Laboratory hours required per week or Hours of field study or individual research per week

Abbreviations and Symbols. The following abbreviations and symbols are used in the List of Courses section:

Arr.	Credit, class, or laboratory hours arranged
ea.	Credit-hour designation applies to each course number listed
	Fulfills old general education requirements in—
G-AH	American history and government
G-BS	Biological science
G-T	Health
G-C	English composition
G-L	Foreign language
G-HA	Humanities and aesthetics
G-ML	Mathematics, statistics, and logic
G-E	Physical education
G-PS	Physical science
G-R	Religion
G-SS	Social science
R	Course may be repeated for credit
H	Course offered through the Honors Program
☐	Cross-reference course—one which originates in one department but may count for credit in another department

Interdisciplinary Courses. Interdisciplinary courses are taught in several areas.

Graduate Courses. Advanced undergraduate or graduate courses (500 series) may be used for graduate credit with certain limitations.

No D credit or correspondence credit can apply toward a graduate degree.

Reservation of Right to Change Courses. The University makes every effort to ensure the accuracy of the contents of this catalog but reserves the right to eliminate, discontinue, or add courses at any time.

Accounting

Professors: Andersen, Garrison, Hubbard, Johnson, Knighton, Orton, K. F. Skousen (Chairman, 350 JKB), K. M. Skousen, J. M. Smith, R. J. Smith, Taylor, Woodfield.

Associate Professors: Albrecht, Cameron, Hansen, Hardy, McAllister, McKell, Randall, Streuling, Western.

Assistant Professors: Brackner, Harde, Palmer, Petersen, Romney, Sonderegger, White.

Undergraduate Program

Accounting Careers

Knowledge of accounting methodology and its ways of describing economic activity has long been a necessary part of education for careers in business. In almost all areas of business, accounting data are a fundamental source of information for purposes of decision making and control. With the rise of mechanical and electronic means of processing data, the trained accountant has been freed from many clerical tasks and is presented with wide opportunities for supervising, at a professional level, the preparation and interpretation of data for operating management and the public.

Professional careers in accounting are to be found in three general areas: (1) management accounting, (2) public accounting, and (3) not-for-profit accounting. Management accountants, as members of the management team, provide information and advice for the purpose of planning and controlling their company's operations. The graduate who works in professional public accounting may be involved in auditing, in tax work, in financial and other advisory services, and in giving many types of advice, e.g., on data processing systems to managements of business firms. Local and state governments, the United States General Accounting Office, the Internal Revenue Service, universities, hospitals, and other agencies provide opportunities in not-for-profit accounting.

University and College Requirements

Students wishing to major in accounting must complete the University general education requirements. Scholarly committees on education for accountancy have stressed the need for courses teaching communication, logic, and relationships between people and their environment. In line with these recommendations, the Accounting Department faculty encourages students to select courses from philosophy, communications, sociology, psychology, English, mathematics, and statistics in fulfilling the general University requirements (see general education programs sections).

Premajor Requirements

Students majoring in the Department of Accounting receive their initial advisement from and are assigned to the College of Business Fundamentals Division until they complete the following premajor courses:

Math. 105 or 110	3 hours
Econ. 110	3 hours
Stat. 221	4 hours
Acctg. 201, 203	6 hours
Acctg. 232 A and B	3 hours
Acctg. 242	3 hours
ComSci. 133 A and B	3 hours

Upper-division accounting courses are available only through admission to the Institute of Professional Accountancy (see requirements following) or through specific authorization from the director of the Institute of Professional Accountancy (IPA).

Institute of Professional Accountancy

To major in accounting a student must apply for and be admitted to the Institute of Professional Accountancy (IPA). IPA classes are restricted to those admitted to the IPA program unless special permission is obtained from the director. Application forms and further information are available at the College of Business Advisement Center (266 JKB) or the IPA office (348 JKB). To be considered for admission to the IPA, students must satisfy University general education and religion requirements and the premajor requirements previously listed. In addition, a student must have completed 60 or more semester hours of University credit with an overall minimum grade-point average of 2.7; and Acctg. 201 and 203 with a minimum grade-point average of 2.85.

The IPA program consists of two distinct phases. Phase 1 courses, generally taken in the junior year, include the following:

IPA 301, 302, 312, 321, 356, 365, and 412	21 hours
BusEd. 320R	3 hours
BusMgt. 301	3 hours
Econ. 300	3 hours

At the completion of Phase 1, those students who desire a four-year general accounting program leading to a bachelor's degree may exit from the IPA and may complete a fourth year of study in the College of Business. Upon completion of the following requirements for a B.S. in accounting, the bachelor's degree will be awarded by the college. Those students who desire the professional program in accountancy will continue with Phase 2 of the IPA program within the Graduate School of Management. Upon completion of the professional program, both the Bachelor and Master of Accountancy degrees are awarded.

Requirements for a B.S. in Accounting

Students electing a B.S. degree in accounting must complete the previously listed Phase 1 IPA courses, plus the following:

Acctg. 409	3 hours
BusMgt. 341	3 hours
Econ. 301	3 hours
OrgB. 321	3 hours

Additional electives must be taken to accumulate the 128 hours needed for graduation. No more than 3 hours of D credit in accounting or IPA courses and no more than 3 hours of D credit in other College of Business courses, or a total of 6 hours of D credit in College of Business accounting and IPA courses, will be allowed for graduation with a degree in accounting.

Requirements for Preprofessional Program

See the *Graduate School of Management Bulletin* for details.

Minors in Accounting

To obtain a minor in accounting, a student is required to complete the premajor requirements listed above plus Acctg. 301, 302, and 312.

Suggested Sequence for General Accounting Program

A suggested sequence of required courses for four-year accounting majors follows. The first two years of the program will be taken while assigned to the Division of Business Fundamentals. Each student will need to make modifications in this program to meet individual needs. Refer to the general education programs sections of this catalog for additional requirements.

Freshman	**Hours**
Econ. 110	3
ComSci. 133 A.B.	3
Math. 105 or 110 or equivalent	3

Sophomore	**Hours**
Acctg. 201, 203, 232A and B, 242	12
Stat. 221	4

Junior	**Hours**
IPA 301, 302, 312, 321, 356, 365, 412	21
BusEd. 320R	3
BusMgt. 301	3
Econ. 300	3

Senior	**Hours**
Acctg. 409	3
BusMgt. 341	3
OrgB. 321	3
Econ. 301	3

Graduate Program

Students should be aware that the courses required and recommended in the foregoing lists provide a general accounting background rather than preparation for positions in professional accounting. Students seeking professional training are advised to consider the five-year IPA program previously referred to.

Accounting Courses

See Graduate School of Management, Courses for Master of Accountancy, for remaining IPA courses.

201. Elementary Accounting. (3:3:1) Home Study also.
A first course in the concepts and methods underlying financial statements.

202. Elementary Accounting. (3:3:1) Home Study also. Prerequisite: Acctg. 201
The second course in the elementary series covering managerial problems and the control of business operations.

203. Elementary Accounting. (3:3:0) Prerequisite: Acctg. 201.
A second course for accounting majors and others. Introduction to managerial accounting plus a review of basic procedures of financial reporting.

232A. Mathematics of Business. (1½:3:1) Home Study also. Prerequiste: Math. 105 or 110 or equivalent.

Application of mathematics to business problems (decision theory). Taught in an eight-week term or block.

232B. Mathematics of Business. (1½:3:1) Home Study also. Prerequisite: Math. 105 or 110 or equivalent.
Application of mathematics to business problems (calculus). Taught in an eight-week term or block.

242. An Introduction to Commercial Law. (3:3:0) Home Study also.
Survey of modern American business law as it applies to everyday business practices.

332. Advanced Mathematics of Business. (3:3:0) Prerequisite: Acctg. 232 or Math. 105 or consent of instructor.
Selected topics from finite mathematics, vectors, matrices, trigonometry, analytical geometry, and elementary differential and integral calculus as applied to business.

399R. Accounting Internship. (3:0:9 ea.) Prerequisites: IPA 302 and 365.
Practical on-the-job experience and training in industry, government, and public accounting firms.

401. Special Problems in Accounting 1. (3:3:0) Prerequisite: IPA 302.
Includes partnerships, estates and trusts, and consolidations.

402. Special Problems in Accounting 2. (2:2:0) Prerequisite: IPA 302.

403. Accounting for Nonprofit Organizations. (2:2:0) Prerequisite: Acctg. 202 or 203 or equivalent.
Accounting concepts and methods peculiar to governmental units, universities, hospitals, and other nonprofit organizations.

409. Accounting Theory. (3:3:0) Prerequisite: IPA 302.

421. Advanced Taxation (3:3:0) Prerequisite: IPA 321.
Tax laws as they apply to selected tax entities, with an introduction to tax research methodology.

442. Advanced Business Law. (3:3:0) Prerequisite: Acctg. 242.
Business law for accountants and businessmen, emphasizing laws covered in professional accounting examinations.

455. Data Processing Systems. (3:3:0) Prerequisite: IPA 356.
Design and installation of accounting systems; selecting equipment for optimum performance in data processing cycles.

486. Contemporary Professional Accounting Problems. (3:3:0) Prerequisite: IPA 321, 365, Acctg. 402 concurrently.
Emphasizes problems encountered in professional examinations.

IPA Courses

301. Intermediate Accounting 1. (3:3:0) Home Study also. Prerequisite: admission to IPA or consent of IPA director.
Intermediate course for those students who need a broad accounting foundation for subsequent specialized studies.

302. Intermediate Accounting 2. (3:3:0) Home Study also. Prerequisite: IPA 301; admission to IPA or consent of IPA director.

312. Cost Accounting. (3:3:0) Home Study also. Prerequisite: admission to IPA or consent of IPA director.
Introduction to the principles and practices of cost accounting.

321. Federal Taxes. (3:3:0) Prerequisite: admission to IPA or consent of IPA director.
An introduction to federal tax concepts and their statutory application, emphasizing the individual taxpayer.

356. Accounting Information Systems. (3:3:0) Prerequisites: ComSci. 133A, B; admission to IPA or consent of IPA director.
Procedures and problems in system design and related topics applied to the financial operations of the business, emphasizing electronic computer systems.

365. Auditing. (3:3:0) Prerequisite. IPA 301; admission to IPA or consent of IPA director.
Principles and methods of auditing, professional responsibility and conduct, and verification techniques of accounts of financial statements.

412. Managerial Accounting. (3:3:0) Prerequisite: IPA 301 and 312; admission to IPA or consent of IPA director.
Budgeting, standard costs, cost analysis, and capital budgeting.

Aerospace Studies

Professor: Col. R. B. Jensen (Chairman, 380-A ROTC).
Assistant Professors: Lt. Col. Baldwin, Capt. Krzymowski, Capt. Patrick.
Tactical Instructors: TSgt. Snell, SSgt. Millett, SSgt. Odom.

Undergraduate Program

General Information. The Air Force ROTC program is designed to produce highly qualified commissioned officers for the U.S. Air Force. The instructional program complements the academic schedule of the University and is taught by professional career Air Force officers. Students specialize in the major field of their choice and graduate with the ability to function as junior executives. The aerospace studies courses are designed to teach principles and techniques of leadership and management in preparation for service as Air Force officers and as leaders in civic and community affairs. All academic work counts toward graduation requirements.

The traditional Air Force ROTC program extends over four years of college and consists of two phases: a two-year basic course during the freshman and sophomore years, and a two-year advanced course covering the junior and senior years of college. Basic course classes meet one hour each week and are designed to acquaint students with world military organizations and current international conditions. Advanced program courses meet three hours each week and emphasize problem solving, research methods, techniques of communication, human relations, creative thinking, management, leadership, military law, defense policies, logistics, and administration.

All students in the four-year program must attend a four-week field training camp at an Air Force base, usually in the summer between the sophomore and junior years.

A two-year program is also offered which enables students to complete all requirements for an Air Force commission in two years of college. Applicants for the two-year program must complete admission requirements during the year prior to the desired date of enrollment and must attend a six-week field training camp at an Air Force base during the summer prior to enrollment. Two-year students normally begin processing during the Fall Semester of their sophomore year and formally enter the Air Force ROTC program at the beginning of their junior year.

All Air Force ROTC students are required to attend a leadership laboratory one hour each week. Practical experience in leadership and command techniques are emphasized during all laboratory periods. Cadet officers and noncommissioned officers direct the laboratory periods under the supervision of active duty Air Force personnel. Leadership laboratory credit for eight semesters of Air Force ROTC fulfills the general education requirements for physical education.

To receive a commission as a second lieutenant in the U.S. Air Force, a student must earn a baccalaureate prior to age 30. If designated for pilot or navigator training, all commissioning requirements must be met prior to age 26½.

Students must be citizens or have filed intent to become citizens of the United States. Physical and academic standards for the basic course are the same as those of the University. To qualify for the advanced program under either the two-year or four-year program, students must pass a mental and physical examination during the year preceding their entry into the professional officer course. At the beginning of the Fall Semester of their junior year students are sworn into the Air Force Reserves and sign an agreement to complete the last two years of Air Force ROTC and to serve on active duty with the Air Force upon graduation. A student incurs no military obligation prior to joining the reserves.

Four-year students usually enroll in Air Force ROTC during their freshman year. Two-year applicants normally begin their processing during the Fall Semester of their sophomore year and formally enter the program at the beginning of their junior year. Students desiring to enter the program at other times should contact the professor of aerospace studies.

Minor in Aerospace Studies. Students desiring aerospace studies as a minor must complete at least 14 hours of course work and the Air Force ROTC requirements, and qualify for a commission in the United States Air Force.

Textbooks, Uniforms, and Allowance. All textbooks, uniforms, and uniform accessories are furnished by the Air Force. All students in the advanced program receive a tax-free allowance of $100 per month (about $2,000 for two years).

Air Force ROTC Scholarship Program. Full tuition assistance is available to students in the two-year or four-year program on a competitive basis. The scholarship includes tuition, fees, full textbook allowance, and $100 per month. Contact the department for application procedures.

Field Training. This training provides students an increased understanding of the Air Force mission and operation. Students receive practical experience in leadership and management while residing on an Air Force base. The program normally includes an orientation flight in high-performance aircraft for each individual. Medical care, housing, food, and uniforms are provided. Approximately $320 in pay is received for four-week training and $480 for six-week training. Transportation is provided to and from the training base.

Flight Instruction Program. A flight instruction program is conducted by an accredited flying school. Senior cadets who have qualified for pilot training are eligible to participate and receive twenty-five hours of flying instruction. Ground school instruction in navigation, weather, flight rules, and other appropriate subjects is presented by Air Force pilots assigned to the department.

Extracurricular Activities. Each Air Force ROTC student will be able to participate in many extracurricular activities. Among these activities are the Arnold Air Society, Air Force ROTC Chorus, Air Force ROTC Band, color guard, drill teams, annual Military Ball, and numerous school service projects performed by the Cadet Corps. Associations and friendships formed continue long after college.

LDS Missions. Students desiring to serve a Church mission should do so between their freshman and sophomore years. This will facilitate entrance into the advanced course. Scholarship students may have their scholarships held for them while they fulfill a mission as long as they do so before entering the advanced program.

Period of Nonattendance. Four-year program students in Air Force ROTC who are in a five-year University program are allowed a year of nonattendance between the basic and advanced courses. Out-of-phase students and those who will be student teaching should consult with the department chairman.

Discipline. Disciplinary training in the Cadet Corps is formulated and administered by the student officers. Air Force ROTC students are civilians and are not subject to military law.

Veterans. A veteran seeking a commission through Air Force ROTC may have part or all of the freshman and sophomore program waived. Allowances are paid in addition to G.I. Bill benefits.

Course Fee. A course fee of $8.00 per semester is required of each participating student at the time of enrollment. The purpose of this fee is to cover student publications, activity expenses, and laboratory costs.

Angel Flight. Angel Flight is a nationally affiliated campus service organization. Members of Angel Flight are usually selected for membership during the Fall Semester. They are required to register for the leadership laboratory corresponding to their academic year in the University.

Sequence of Courses

The following is the normal sequence of Air Force ROTC classes (two-year students follow the junior and senior schedule):

General Military Course (Basic)	**Hours**	
Freshman Year	**Fall**	**Winter**
Aeros. 110, 111	1	1
Aeros. 110A, 111A	½	½
Sophomore Year		
Aeros. 210, 211	1	1
Aeros. 210A, 211A	½	½
Professional Officer Course (Advanced)		
Junior Year		
Aeros. 310, 311	3	3
Aeros. 310A, 311A	½	½
Senior Year		
Aeros. 410, 411	3	3
Aeros. 410A, 411A	½	½
Aeros. 420*	2	
Aeros. 420A*	1	

*Students qualifying for the Flight Instruction Program

Courses

110. U.S. Air Force Organization and Strategic Forces. (1:1:0)

Development, organization, and doctrine of the U.S. Air Force, emphasizing Strategic Force Requirements.

111. Aerospace Defense, General Purpose, and Support Forces. (1:1:0)

U.S. Air Force Defensive Forces, General Purpose Forces, and Tactical Air Forces.

110A, 111A. Leadership Laboratory—Freshmen. (½:0:1 ea.)

Basic fundamentals of military leadership—drill, courtesy, planning, and organizing at various levels of responsibility.

210, 211. The Developmental Growth of Air Power. (1:1:0 ea.) Prerequisite: Aeros. 111 or consent of department chairman.

Development of various concepts of air power employment, emphasizing factors that have prompted research and technological change.

210A, 211A. Leadership Laboratory—Sophomores. (½:0:1 ea.)

As listed for Aeros. 110A/111A. Increased emphasis on performance level.

310. Management and Leadership. (3:3:0) Prerequisite: approval of department chairman.

Air Force management and personnel policies.

311. Management and Leadership. (3:3:0) Prerequisite: approval of department chairman.
Principles of leadership, problem solving, communication, discipline, and human relations.

310A, 311A. Leadership Laboratory—Juniors (½:0:1 ea.) Prerequisite: approval of department chairman.
As listed for Aeros. 110A/111A Students perform as cadet officers.

410. National Security Forces in Contemporary America. (3:3:0) Prerequisites: Aeros. 310, 311.
Military profession, civil-military interaction, and the forming of defense strategy.

411. National Security Forces in Contemporary America. (3:3:0) Prerequisites: Aeros. 310, 310A, 311, and 311A. By permission only.
Strategy and management of conflict and the forming and implementing of U.S. defense policy.

410A, 411A. Leadership Laboratory—Seniors. (½:0:1 ea.) Prerequisite: approval of department chairman.
As listed for Aeros. 310A. Senior cadets perform in leadership positions in planning and conducting all activities of the Cadet Corps.

420. Flight Instruction Ground School. (2:2.0) Prerequisite, approval of instructor or department chairman.
Proficiency in FAA regulations, preflight facts, navigation techniques, weight and balance computation, and Airman Information Manual data to prepare students for the FAA Private Pilot Written Examination.

420A. Flight Instruction Laboratory. (1.0:2) Prerequisites: concurrent enrollment in Aeros. 420, membership in AFROTC, and qualification for USAF pilot training. By permission only.
Dual and solo flying to include basic and advanced flight maneuvers in light aircraft.

Agricultural Economics

Professors: Carpenter, Corbridge, Fuhriman, Infanger, Park (Chairman, 475 WIDB).
Associate Professor: Wood.
Assistant Professors: Ellsworth, Teichert.

Degrees Available: Bachelor of Science and Master of Science.

Undergraduate Program

Agricultural economics emphasizes the economic and business aspect of farm-ranch units and of the agribusiness and food industry firms. The discipline also includes the economic aspects of natural resource use and of rural community development. A shortage of trained personnel currently exists in these areas: therefore, excellent employment opportunities are available for well-prepared graduates.

Agricultural economics offers training which will be helpful for students who contemplate employment in farm-ranch management or operation, in government or private agencies, in farm finance institutions, or in extension, sales, or managerial positions in the agribusiness or food processing and distribution industries. It also prepares students for graduate training.

Major Requirements

All students majoring in agricultural economics should take the following or equivalent classes:

Core
Acctg. 201, 202 or 203, 232A and B
AgHrt. 151 and 282
AnScl. 121 or 153 and 207
ComSci. 131 or 133A and B
Math. 100F or equivalent, and 105 or 110

Departmental
AgEcon. 112
Econ. 300
Econ. 301
AgEcon. 325, 410 or 411, 460, 490R

A student is encouraged to concentrate on one of the following: (1) preprofessional, (2) farm-ranch operation or management, (3) agribusiness, (4) real estate or (5) food industries management. All majors except those selecting option 5 are required to complete a minimum of 20 hours of upper-division or advanced undergraduate or graduate courses in agricultural economics. The food industries management option will give a student a double major in agricultural economics-animal science or agricultural economics-food science and nutrition. Students selecting this option will be required to complete a minimum of 20 hours of lower, upper, or advanced undergraduate or graduate courses in agricultural economics as well as 20 hours in either animal science or food science and nutrition.

Minor Requirements

Students minoring in agricultural economics should complete 12 hours of upper-division course work in the department

Options

Preprofessional. A student anticipating graduate training in agricultural economics is advised to obtain a good background in economic theory, mathematics, and statistics. The following courses are recommended: Math. 112, Stat. 221, Econ. 315 and AgEcon. 570R. Additional classes are recommended from the following areas: agricultural economics, agronomy, animal science, business management, economics, econometrics, horticulture, mathematics, and statistics

Farm-Ranch Operation or Management. A student anticipating this option is advised to obtain a good background in agronomy and horticulture and animal science. The following additional courses are suggested: AgEcon 320 and 520 or 521; AgHrt. 305, 331; AnScl. 221, 307; Range 365, 462. Additional supporting classes are recommended from the following areas: accounting, agricultural economics, agronomy, animal science, business management, econometrics, horticulture, and range science.

Agribusiness. A student selecting this option should concentrate on training that will lead to a minor in business management and/or accounting as well as training in agronomy and animal science. The following classes should be included: AgEcon. 320, 350R, and 425. Additional supporting classes are recommended from the following areas: accounting, agricultural economics, agronomy, animal science, business management, and economics.

Real Estate. A student selecting this option should concentrate on courses that will give support in accounting and/or business management. The following classes should be included. AgEcon. 350R, 425, and 426; Econ. 352; and BusMgt. 487

Food Industries Management. The basic training needed in this option is in business management and economics, with enough chemistry, animal/food science, and microbiology courses to provide a sound scientific background. Students selecting this option will follow either the AgEcon.-AnSci. or the AgEcon.-FSN sequence below:

AgEcon.-AnScl. Sequence
AnScl. 112, 207, 328, 525, and 8 hours from 221, 325, 361, 365, 374, 378, 507
Chem 102, 103
FSN 264, 265, 461
Micro. 321, 322, 361
Stat. 221
Zool. 105

AgEcon.-FSN Sequence
AnSci. 328, 525
Chem 102, 103
FSN 235, 264, 265, 461, 462, 465

Micro. 321, 322, 361
Stat. 221
Zool. 105

Associate Degree in Agricultural Economics. The associate-degree program is designed for those students who do not complete the four-year baccalaureate degree. Courses taken in this program may count toward the baccalaureate degree if students later decide to further their education. A candidate must satisfy the University associate degree general education requirements. The following two-year outline suggests a sequence of courses. Refer to the general education programs section of this catalog for additional requirements.

First Year	F	W
AgEcon. 112, 325	3	4
Chem. 100 or Physics 137		3
AgHrt. 151 or 282	4	
AnSci. 153 or 207		3-4

Second Year	F	W
AgEcon. 320, 410, or 411	3	3
Acctg. 201, 202	3	3

Suggested electives include all courses in agricultural economics, animal science, agronomy and horticulture, and manufacturing technology.

Graduate Program

Program. Master of Science (M.S.).

Field. Agribusiness.

Entrance Examination Required. None.

Application Consideration Dates. Same as Graduate School deadlines.

Entry Times. Any regular registration.

Master of Science

Prerequisites. An undergraduate degree in any field of agriculture, food science, or closely related fields, including the following classes or their equivalent. AgEcon. 112; Acctg. 201, 202; Math. 110 and Acctg. 232; Stat. 221; ComSci. 131 or 133A and B.

Requirements. A minimum of 30 semester hours; a supervised special project including a scholarly project report; a final oral examination.

This program is designed primarily as a terminal degree for students who want to obtain a more adequate practical working knowledge of economics and business principles as they apply to agribusiness enterprises.

Required Courses. As designated by committee.

Courses

Note: AgEcon. 112 or equivalent or consent of instructor is prerequisite to all other AgEcon. courses.

105. (AgEcon.-AgHrt.-AnSci.) Agriculture: Food and Man. (3:3:0) (G-BS)
Plants and animals as agricultural products—their husbandry, distribution, and utilization.

112. Economics and Agriculture. (3:3:1) (G-SS)
How agriculture operates in the market system and is affected by supply and demand, costs of production, national income analysis and policy, and international trade.

☐ **Accounting 242. An Introduction to Commercial Law.** (3:3:0)

☐ **Economics 300. Microeconomics for Business Decisions.** (3:3:0)

☐ **Economics 301. Macroeconomics for Business Decisions.** (3:3:0)

320. Agribusiness Organization and Finance. (3:3:0)
Principles of agribusiness finance and credit, forms of agribusiness organization.

325. Farm and Ranch Management. (5:3:2) Home Study also.
General business management problems and developing a farm-ranch plan, including farm records, financial analysis, input-output budgets, economics, principles of resource combination, final conclusions.

350R. Land and Range Economics. (3:3:0 ea.) (G-SS)
Settlement, use, ownership, tenure, control, and management of land; organization of land agencies; land policies; and public and private lands or American Indian lands.

399R. Cooperative Education: Supervised Management and Training. (1-6:0:Arr. ea.) Prerequisite: sophomore standing and course work pertinent to proposed experience.
On-the-job experience improves ability to function in a particular phase of agribusiness management.

410. Agricultural Marketing. (3:3:0) Home Study also.
Economic principles, policies, institutions, practices, and problems in marketing major agricultural products.

☐ **Economics 410. Theory of Price.** (3:3:0)

411. Marketing of Livestock and Livestock Products. (3:3:0)
Economic principles, policies, institutions, and practices, and their application to livestock marketing.

☐ **Economics 411. Theory of Income, Employment, and the Price Level.** (3:3:0)

425. Real Estate Appraisal. (3:3:0) Home Study also.
Principles of appraisal, urban and rural property valuation techniques, and recognized appraisal procedures.

426. Real Estate Finance. (3:3:0)

460. Public Programs, Policies, and Agriculture. (2:2:0)
Analyzes impacts of public programs, policies and issues, external forces, and institutions that affect the agricultural industry.

490R. Seminar. (1:1:0 ea.)

493R. (AgEcon.-AgHrt.-AnSci.) Selected Agricultural Production Practices. (1-3: Arr.:Arr. ea.) Prerequisite: consent of instructor.
Extended field course to acquaint students with agricultural economic, animal science, and agronomic and horticultural problems and practices in important commercial agricultural areas.

☐ **Statistics 501, 502. Statistics for Research Workers 1, 2.** (5:4:3 ea.)

520. (AgEcon.-AnSci.—Range) Management of Ranch Resources. (3:2:2) Prerequisites: senior or graduate standing and consent of instructor.
Commercial ranch case study. Management plan developed, consisting of maximum profit practices and enterprise combinations.

521. (AgEcon.-AgHrt.) Management of Cropland Resources. (3:3:0) Prerequisites: senior or graduate standing and consent of instructor.
Commercial farm case study. Management plan developed, consisting of maximum profit practices and enterprise combinations.

☐ **Animal Science 525R. Feed Manufacturing.** (3:2:2)

570R. Advanced Topics. (1-3:1-3:0 ea.) Prerequisite: consent of instructor.
Topics in finance, marketing, policy, and economic theory.

575R. Research Methods and Reporting. (1-3:Arr.:Arr. ea.) Prerequisite: consent of instructor.
Principles of research methodology, application of research tools, and presentation of research results. Requires an acceptable written report.

595R. Readings and Conferences. (1-3:Arr.:Arr. ea.)

597R. Individual Research. (1-3:Arr.:Arr. ea.)

599R. Cooperative Education: Supervised Management and Training. (1-6:0:Arr. ea.) Prerequisite: sophomore standing and course work pertinent to proposed experience.

On-the-job experience improves ability to function in a particular phase of agribusiness management.

Agronomy and Horticulture

Professors: Allred, Farnsworth, Laws, Robison (Chairman, 275 WIDB).
Associate Professor: Reimschüssel.
Assistant Professor: Williams.

Degrees Available: Bachelor of Science and Master of Science.

Undergraduate Program

Agronomy deals with the scientific principles and practices of field crop production, crop ecology, and physiology and crop improvement; and with the fertility, irrigation, management, and conservation of soils.

Horticulture deals with the production, handling, processing, and storage of fruit and vegetable crops and with flowers and other ornamental plants. Landscape planning and design for home and community beautification, turf and park management, and greenhouse and nursery operations are also included.

In these subject matter fields, knowledge of the basic principles of the biological and physical sciences is applied to the management of soils and the production of food, fiber, and ornamental plants. Emphasis is given to basic scientific principles and modern methods of practical application.

Students may elect to major in either agronomy or horticulture. Laboratory, greenhouse, orchard, and field facilities are available to support undergraduate studies for the B.S. degree and graduate studies at the master's level in this department. Graduates interested in further study are encouraged to go to one of the state universities for graduate work at the doctoral level.

Opportunities

Demands by employers for agronomy and horticulture graduates are far exceeding the number of graduates. Agronomy and horticulture training prepares a student for employment by state and federal agencies, private industry, and agribusiness, for return to personal enterprise, or for graduate school—depending on course options.

Departmental Requirements

Students who major in either agronomy or horticulture will be expected to fulfill all of the requirements set forth under the general education program and also those listed under Graduation Requirements in this catalog. They will be expected also to complete a minimum of 26 hours of course work and 1 hour of seminar in their major

A minor is not required, but a substantial number of supporting courses in fields closely related to the major are required. A strong preparation in mathematics and the physical and biological sciences is recommended for those who major in agronomy or horticulture.

At least half of the credit for the major in either agronomy or horticulture must be taken at Brigham Young University, and no D credit in the major will be counted toward fulfillment of this requirement.

Agronomy Major

Students who major in agronomy will be required to take the following courses: AgHrt. 151, 282, 305, 491R.

Horticulture Major

Students who major in horticulture may choose to specialize in fruit and vegetable production or in ornamental horticulture (floriculture and greenhouse production, nursery production, and turf production).

All majors in horticulture are required to take the following courses: AgHrt. 102, 103, 282, 491R.

Options

Students may choose within either the agronomy and horticulture majors a production, science, or agribusiness option.

The production option is intended for students returning to farming or those not anticipating graduate school. This option provides students with an opportunity to select classes and obtain a broad educational background. Students who take the production option and then decide to attend graduate school will have to obtain the required chemistry and math before leaving the department.

The science option requires more math and chemistry than the production option and is designed for students intending to go to graduate school. These students should take agronomy and horticulture classes that will provide a base for future graduate work.

Production Option

Agronomy
- Math. 105
- Chem. 102, 103
- Bot. 101
- AnSci. 121 or 207
- AgEcon. 112
- AgHrt. 102, 302, 440

Horticulture
- Math. 105
- Chem. 102, 103
- Bot. 101
- AgEcon. 112
- AgHrt. 207, 317, 318, 340, 351

Science or Technical Employment Option—Recommended Courses

Agronomy
- Math. 105 or 110; 119
- Chem. 105, 106, 223, 252 (or 351)
- Bot. 101, 440
- Micro. 121 or 331
- Stat. 501

Horticulture
- Math. 105 or 110; 119
- Chem. 105, 106, 223, 252, or 351
- Bot. 101, 440
- Micro. 121 or 331
- Stat. 501

Agribusiness Option

A student selecting this option should take strong supporting agricultural economics courses.

The following courses are recommended in addition to the courses required for a major in the various phases of agronomy and horticulture: Acctg. 201, AgEcon. 112, 320, 325, 410, 521.

A student majoring in recreation in the College of Physical Education who desires training in the maintenance of parks and recreation areas should register for 14 or more hours selected from the following: AgHrt. 102, 103, 317, 318, 319, 430, 475.

Preprofessional Option

Students may elect to use this major in preparation for medicine, dentistry, etc.

Additional Supporting Courses Recommended

AnSci. 121, 153, 207, 221, 335, 340, 361
Bot. 321, 370, 440, 480
Physics 201, 202
ComSci. 131, 133A
Acctg. 232

Associate Degree

The associate degree program is designed for those students who do not complete the four-year baccalaureate degree, though courses taken in this program may count toward the baccalaureate degree if students later decide to further their education. A candidate must satisfy the University associate degree general education requirements. The following two-year outline suggests sequence of courses. Refer to the generel education programs sections of this catalog for additional requirements.

Horticulture

First Year	F	W
Chem. 102	5	
Bot. 105		3
AgHrt. 102, 282	3	4
AgHrt. 340, 471 or 103, 319	3	3(*2)

Second Year	F	W
Bot. 480	3	
AgHrt. 305	4	
AgHrt.**310, 351 or AgHrt.*207, 317, 430	**4(*3)	**6(*7)

Electives may include courses in agronomy and horticulture, animal science, agricultural economics, and technology.

*Ornamentals option

**Fruit and vegetable option

Agronomy

First Year	F	W
Chem. 102	5	
AgHrt. 151	4	
AgHrt. 440	4	
AnSci. 207	4	
AgEcon. 112	3	

Second Year	F	W
AgHrt. 302, 540	3	3
AgHrt. 305, 491R	4	1
AgHrt. 331	3	

Electives may include courses in agronomy and horticulture, animal science, agricultural economics, and technology.

Graduate Program

Program. Master of Science (M.S.).

Fields. Agronomy, horticulture.

Entrance Examination Required. None, but an oral examination by the graduate committee is given to determine student preparation and to direct graduate studies.

Application Consideration Dates. Same as Graduate School deadlines.

Entry Times. Any regular registration.

Master of Science

Prerequisites. Undergraduate major in the field or the equivalent.

Minors Permissible. Statistics, computer science, botany, mathematics, geology, or physics; Option 2.

Requirements. Minimum of 24 semester hours plus thesis (6-hr. min.), as determined by department graduate committee.

Required Courses. Stat. 501. AgHrt. 694R, two semesters.

Courses

102. Applied Plant Growth and Reproduction. (3:2:2)
Introduction to propagation of plants by seeds, cuttings, budding, and grafting, emphasizing fruit and ornamental plants.

103. Home Landscape Design. (3:3:0)
Design and composition as applied to home ground development, related plant culture, and maintenance.

105. (AgEcon.-AgHrt.-AnSci.) Agriculture: Food and Man. (3:3:0) (G-BS)
Plants and animals as agricultural products—their husbandry, distribution, and utilization.

112. Floral Design. (2:1:2)
Principles and methods of arranging flowers and other plant materials for decorative use in the home and for exhibition.

151. Field Crop Production. (4:3:2)
Crop production principles, soil-plant relationships, classification and distribution of farm crops, corn and small grain improvement, tillage, and crop rotation.

207. Floriculture. (3:2:3)
Herbaceous plant culture in the greenhouse and out-of-doors.

210. (AgHrt.-FRM-FSN) Family Food Production, Storage, and Economics. (3:3:0)
Vegetable and fruit garden production, quality food preservation and storage, and the family economics involved.

282. Introduction to Soil Science. (3:3:0) Prerequisite: concurrent enrollment in AgHrt. 283 for all majors. Recommended: high school chemistry.
Physical, chemical, and microbiological properties of soils.

283. Introduction to Soil Science Laboratory. (1:0:3) Prerequisite: concurrent enrollment in AgHrt. 282. Recommended: high school chemistry.

302. Irrigation and Drainage. (3:2:3) Prerequisites: AgHrt. 282; Math. 105.
Irrigation practices, water supply, water measurements, and drainage systems.

303. Soil Genesis, Classification, and Survey. (3:2:3) Prerequisite: AgHrt. 282. Recommended: Geol. 111.
Influence of geologic forces, climatic environment, and vegetation on the morphology and development of soils; soil classification and survey.

305. Soil Fertility. (4:3:3) Prerequisites: AgHrt. 282 and Chem 102 or equivalent.
Soil fertility, commercial fertilizers, farm manures, green manures, and crop rotations.

308. Soil and Water Resource Management. (2:2:0)
Soil and water conservation, erosion control, and land use to maintain soil fertility and permanent agricultural production.

310. Small Fruit Production. (2:2:0)
Propagating, planting, growing, and handling grapes, strawberries, and other bush-type fruits. Offered alternate years.

317. Nursery Management. (2:1:2) Prerequisite: AgHrt. 102 or 103 or equivalent.
Profitable management of a nursery: site, soil, culture, handling of nursery stock, transplanting, propagation, and pest problems.

318. Greenhouse Management. (4:2:4) Prerequisite: AgHrt. 207 or equivalent.
Propagating, planting, growing, and storing commercial flowers.

319. Turf Management. (2:1:2) Prerequisite: AgHrt. 207 or equivalent.
Management relative to climate, soil, and use on the golf course, park, and private areas.

331. Weed Science. (3:3:2) Recommended: AgHrt. 151, 282.
Cultural, chemical, and biological methods of weed control.

340. Vegetable Crops. (3:2:2)
Selection, cultural practices, harvesting, storing, and marketing of vegetable crops.

351. Fruit Production 1. (4:3:2) Prerequisite: AgHrt. 102.
Fundamentals of commercial fruit production in temperate zones.

399R. Cooperative Education: Agronomy and Horticulture Internship. (Arr.:0:0 ea.) Prerequisite: consent of department chairman. Arrangements must be made the semester before enrollment.
On-the-job experience.

407. Soil Physical Conditions. (3:3:0)

430. Landscape and Planting Design. (3:0:6) Prerequisite: AgHrt. 103. Recommended: drawing.
Designs and plant combinations for private and public grounds using woody and herbaceous plants.

440. Forage Crops and Pasture Management. (3:3:0) Prerequisite: concurrent enrollment in AgHrt. 441 for all majors. Recommended: AgHrt. 151.
Plant characteristics, production and utilization of forage crops, and utilization of irrigated and dry land pastures.

441. Forage Crops and Pasture Management Laboratory. (1:0:3) Prerequisite: must be taken concurrently with AgHrt. 440.
Species identification and management problems associated with forage crops.

457. Ecology of Weeds and Crops. (2:2:0)
Field study of important grasses, legumes, other agronomic crops, and weeds; adaption to soil, moisture, light, and other environmental conditions; growth characteristics, utilization, and control.

460. Soil and Crop Management. (2:1:2) Prerequisite: AgHrt. 151 and 282 or equivalent.
Integration and application of the basic agricultural sciences in crop production and soil management.

475. Maintenance of Parks and Recreation Areas. (4:3:2) Prerequisite: Bot. 101 or AgHrt. 102 or 103.
General maintenance of lawns and herbaceous and woody plants in a city. (Recommended for those who minor in horticulture emphasizing park planning and management.)

491R. Seminar. (1:1:0 ea.)
For majors in the senior year Current literature in agronomy and horticulture.

493R. Selected Agricultural Production Practices. (1-3:Arr.:Arr. ea.) Prerequisite. consent of instructor.
Extended field course to acquaint students with agricultural economic, animal science, and agronomic and horticultural problems and practices in important commercial agricultural areas.

497R. Special Problems. (1-2:1-2.0 ea.)
Seniors specializing in agronomy or horticulture may conduct research on a special problem.

511. Soil Physics. (3:2:3) Prerequisites: AgHrt. 282; Math. 105 and Chem. 102 or equivalent.
Physical properties of soils and their effects upon air, water, and temperature in relation to soil management and crop production.

514. Soil Microbiology. (3:2:3) Prerequisites: AgHrt. 282, Chem. 252, and Micro. 331.
Ecology and role of soil microorganisms in soil fertility, decomposition of organic matter and waste materials, and degradation of pesticides and other agricultural chemicals.

520. Chemistry and Management of Arid Zone Soils. (3:2:3) Prerequisites: AgHrt. 302, 305.
Physical and chemical properties of saline and alkali soils—their diagnosis, reclamation, and management for crop production.

521. (AgHrt.-AgEcon.) Management of Cropland Resources. (3:3:0) Prerequisites: senior or graduate standing and consent of instructor.
Team-taught agronomy and agricultural economics. Commercial farm case study. Management plan developed, consisting of maximum profit practices and enterprise combinations.

540. Advanced Crop Production. (3:3:0) Prerequisites. AgHrt. 151, 305, 559; Bot. 440.
Basic concepts in plant-soil-climatic relationships, emphasizing recent advances in crop culture and management.

550. Advanced Horticulture. (3:3:0) Prerequisites: AgHrt. 318 or 340 or 351, and 352; Bot. 440.
Fundamental horticultural practices and physiological development.

559. Plant Breeding. (2:2:0) Prerequisite. AgHrt. 151 or equivalent; Bot. 372.
Genetics and methods of plant breeding applied to improving agronomic and horticultural crops.

560. Soil and Plant Analysis. (2:0:6) Prerequisites: AgHrt. 305, Chem. 223.
Laboratory chemical analysis of soils and plant materials in soil and plant research.

598R. Conferences and Reports. (1-2:1-2:0 ea.) Prerequisite: consent of instructor.

605. Chemistry of Soil-Plant Relationships. (4:3:3)

694R. Seminar. (1:1:0 ea.)

697R. Research. (1-9.Arr.:Arr.)

699R. Thesis for Master's Degree. (Arr.)

American Studies

Coordinator: Neal E Lambert (A-211 JKBA)

American Studies offers students an opportunity to organize a major program that reflects their own interests in the American experience and their own plans for a professional career. Designed primarily for those who are looking for a broad yet rigorous undergraduate major, American Studies brings together a variety of courses and disciplines that focus on the United States. Thus, American Studies requirements lead students across traditional departmental lines to take courses in American literature, history, anthropology, geography, economics, etc., depending on the student's own background, interests, and abilities. While American Studies is general in its focus, it also encourages the student to develop particular skills in literary criticism, historical research, and social, political, and economic analysis.

Central to the program are several core American Studies courses and seminars which focus on specific periods and problems. In these one might expect to study such topics as "The Gilded Age," "The Sense of the Sixties," or "The Image of the City in Nineteenth-Century American Literature." These courses provide students with interdisciplinary experience, exposure to a variety of excellent scholars and teachers, and training in disciplined analysis and clear writing.

The student may select from a number of different emphases within the program and graduate well qualified to enter law school, MBA or MPA programs, government or community service, the teaching profession, or further graduate studies.

Undergraduate Program

For the bachelor's degree in American Studies the student must take a minimum of 32 hours of approved courses relating to the American experience as follows:

Required (9 hours)
American Studies 301, 302, 490R

Recommended (2-3 hours)
At least one course that deals with the culture of some American country other than the United States.

Electives (20-21 hours)
To be chosen from at least four different disciplines and focused by the intentions of the student with the advice and consent of the coordinator.

Courses

301. Studies in the American Experience before 1865. (3:3:0) Prerequisites: 9 hours relating to the American experience (e.g., Hist. 121, Engl. 361, Geog. 451) as approved by the coordinator.
Broad examination of a selected period or problem in American culture, using a number of different disciplines and approaches.

302. Studies in the American Experience after 1865. (3:0:0) Prerequisites: 9 hours relating to the American experience (e.g., Hist. 121, Engl. 361, Geog. 451) as approved by the coordinator.

Broad examination of a selected period or problem in American culture, using a number of different disciplines and approaches.

490R. Senior Seminar. (3:0:0) Prerequisites: AmSt. 301 and 302 or consent of instructor.

Using understanding of several disciplines to study a carefully defined problem in American culture.

Animal Science

Professors: Gardner, Hoopes, Orme (Chairman, 375 WIDB), Park, Shumway, Wallentine.
Associate Professors: Johnston, Smith.
Assistant Professor: Allen.
Instructors: Hawkins, Kuhl, Pace, Thompson.

Undergraduate Program

The Department of Animal Science offers training for the following activities: (1) government agricultural positions; (2) graduate study; (3) positions in the meat, dairy, and food industries; (4) livestock farming and management; (5) veterinary school; and (6) agricultural extension.

Transfer students majoring in animal science must earn at least half of their credits in their major field while in residence at Brigham Young University. Preveterinary students will find special instructions listed in the Preprofessional Programs section of this catalog.

Animal science majors should study the four curriculum options and the associate degree offering listed below and choose the one which seems best suited to their needs. Any of these options may be completed and a B.S. degree obtained in three years, with careful planning and attendance during Spring and Summer Terms.

Production Option Requirements

AnSci. 121, 207, 212, 215, 221, 292, 307, 312 or 520, 325 or 328 or 365 or 340 or 361, 340 or 374 or 378, 492.
AgEcon. 112, 320 or 325, 411 or AnSci. 525
AgHrt. 282, 302 or 305 or 440 or Range 365 or AnSci. 360
Acctg. 201
Chem. 102, 103
ComSci. 130 or Stat. 100
Micro. 121 or 321
Math. 105 or 110 equivalent

Electives

See departmental advisers for recommended electives.

Business and Industry Option Requirements

AnSci. 121, 207, 212, 215, 221, 292, 325 or 365, 492, 525, 335 or 340 or 361, 345 or 374 or 378
AgEcon. 112, 320, 325, 410 or 411
AgHrt. 282
Acctg. 201, 232A
Math. 105 or 110 equivalent
Chem. 102, 103
Stat. 100 or ComSci. 133A, B
OrgB. 321

Electives

See departmental advisers for recommended electives.

Science Option Requirements

AnSci. 121, 207, 212, 215, 292, 492, 335 or 340 or 345 or 361 or 374 or 378, 325 or 328 or 365 + 8 elective hours
AgEcon. 112
AgHrt. 282 or 151
Bot.-Micro.-Zool. 201
Micro. 321, 322
Chem. 105, 106, 252, 481
Math. 105 or 110 equivalent, 111, 109
Physics 105 and 106 or 201 and 202
Stat. 100 or 221 or ComSci. 131

Electives

See departmental advisers for recommended electives.

Food Science and Industry Option Requirements

AnSci. 121, 207, 221, 292, 325, 328 or 365, 492 or FSN 490
FSN 264, 265, 461, 462
AgEcon. 112, 411
Micro. 321, 322, 361
Math. 105 or 110 equiv.
ComSci. 131 or Stat. 100 or 221

In addition to the courses listed above, students preparing for a food industry career must take the following courses or their equivalents:

AnSci. 421R
Chem. 102, 103, 252, 281
Acctg. 201
AgEcon. 320
OrgB. 321

Students preparing for a food research and development career must take the following courses or their equivalents:

Chem. 105, 106, 252 or (351, 352, 353), 281 or 481

Suggested Sequence of Courses
Freshman Year

	Business and Industry	Production	Science
Animal Science	6-7	6-7	6-7
Mathematics	3	3	6
Chemistry	6	6	4-8
Agronomy-Horticulture or Agricultural Economics	3-4	3-4	3-4

Equitation Certification

Students who complete this certification will be prepared to teach fundamental Western Horsemanship skills to beginning riders and will have a good foundation if they desire to continue in more advanced work with horses. Areas to be covered are handling, grooming, health, management, feeding, equipment, judging and selection, hauling, trail riding, breeding, training, showing, and organizing and putting on horse shows. Students will be given the opportunity to develop their teaching skills by assisting with the equitation classes.

Added emphasis on youth leadership will prepare students to serve in youth leadership organizations or other recreational agencies.

Required Courses

PE 130
AnSci. 130R (2 hours), 215, 207, 212, 221, 230, 312 (optional), 330, 399R (5 hours), 595R (optional)
Health 121
OrgB. 321 or 358
YthLdr. 278, 278R, 371 or 402R, 381, and 382 (optional)

Associate Degree in Animal Science

Students may elect to receive an associate degree in animal science by completing the following courses. This sequence will require approximately two years to complete. If desired, a baccalaureate degree may be obtained later by completing the additional course work described above.

Associate Degree Requirements and Suggested Sequence

First Year	F	W	Sp	S
Chem. 102, 103		6		
AnSci. 121, 153	3	3		

	F	W	Sp	S
AgEcon. 112	3			
Animal science internship*				2-4
Second Year	**F**	**W**	**Sp**	**S**
AgHrt. 282	4			
AgEcon. 325 or 411		3-4		
AnSci. 207		4		
Acctg. 201	3			
AnSci. 221 or 361 or 374	3-4	4		
Animal science internship*				2-4

*Internships may be in any production or processing area on or off campus by agreement with department chairman.

Graduate Program

Program. Master of Science (M.S.).

Field. Animal science.

Entrance Examinations Required. None.

Application Consideration Dates. Same as Graduate School deadlines.

Entry Times. Any regular registration.

Master of Science

Prerequisite. A bachelor's degree in animal science (20 semester credit hours) or closely related field and 30 semester hours in biological, mathematical, and physical sciences.

Minors Permissible. Agribusiness, agronomy and horticulture, botany, chemistry, computer science, microbiology, statistics, or zoology.

Requirements. Minimum of 24 semester hours plus thesis (6-hour min.).

Required Courses. Engl. 316; Stat. 501, AnSci. 462 or 515, 507, 692R (each semester).

Courses

105. (AgEcon.-AgHrt.-AnSci.) Agriculture: Food and Man. (3:3:0) (G-BS)
Plants and animals as agricultural products—their husbandry, distribution, and utilization.

110. Pet Nutrition and Care. (1:1:0)
Applied studies of dogs, cats, gerbils, hamsters, guinea pigs, amphibians, rabbits, and horses.

121. Principles of Animal Production. (3:2:2)
Introduction to the principles and practices of the livestock industry.

130R. (AnSci.-PE) Intermediate Equitation (1:1:2) Prerequisite: PE 130.
Developing skills in riding patterns and gymkhana events. Assist PE 130 students, continue to develop and perfect aids, schooling movements, etc. Work with green-broke colt or spoiled horse.

207. Feeds and Feeding. (3:2:2) Prerequisites: intermediate algebra or equivalent; Chem. 102 or equivalent.
Nutrition and its application to all types of livestock.

212. Animal Physiology and Anatomy. (3:2:2)
Structure and functions of the animal body.

215. Fundamentals of Animal Breeding. (2:2:0)
Heredity, variation, selection, and systems of breeding.

221. Livestock and Meat Evaluation and Selection. (3:2:4)
Live animal and carcass judging of beef cattle, sheep, and swine; live horse judging.

230. Horse Production. (2:1:2) Prerequisite: AnSci.-PE 130R or concurrent enrollment.
Development and use of breeds, selection and judging, feeding, health, and management.

292. Seminar. (1:1:0)
Library resource identification and its use relative to animal science and industry.

307. Applied Nutrition. (3:2:2) Prerequisite: AnSci. 207.
Case studies in ruminant and nonruminant nutrition.

312. Animal Hygiene. (4:3:3) Prerequisite: AnSci. 112. Recommended: Micro. 321.
Animal sanitation in relation to disease prevention and control.

324. Consumer Meats. (2:1:3) Home Study also.
Nutrition, selection, pricing, and preparation of meats.

325. Meat and Meat Products. (3:2:3)
Preservation, slaughtering, cutting, identification, inspection, etc., of meats.

328. Meat Processing Methods. (2:1:3)
Principles and techniques of meat preservation, including cured products; varieties of fresh, cooked, and dry sausages; and jerky.

330. Horse Management. (2:1:2) Prerequisite: AnSci. 230.
Handling and training, fitting and preparing for show, caring for feet, and using equipment. Stallion management, brood mare and foal care.

335. Beef Cattle Production. (3:2:3) Home Study also.
Nutrition, genetics, physiology, and management.

340. Sheep Production. (2:1:2)
Nutrition, genetics, physiology, and management of range and farm sheep operations.

345. Swine Production. (2:1:2)
Nutrition, genetics, physiology, and management.

360. (AnSci.-Range) Livestock Range Management. (3:2:3) Recommended: AnSci. 207.
Managing native and seeded range for livestock and big game production.

361. Elements of Dairying. (4:3:3) Prerequisites: completion of or concurrent registration in AnSci. 153 and 207.
Breeding, feeding, and managing dairy cattle.

365. Milk and Milk Products. (3:2:3) Prerequisite: Chem. 102 or equivalent.
Properties of milk and milk products and methods of processing and distribution.

374. The Science of Poultry Production. (2:1:2)
Feeding, disease control, and business management.

378. The Production of Poultry Meat. (2:2:0)
Management, nutrition, and marketing of turkeys and broilers.

399R. Cooperative Education. (Arr.) Prerequisite: approval of department chairman.
On-the-job experience in livestock or meat production practices, veterinary medicine, or research. On- and off-campus opportunities.

421R. Advanced Topics in Livestock and Meat Evaluation. (1:0:3 ea.) Prerequisite: consent of instructor.
In-depth work in livestock, meats, dairy cattle, or dairy products judging.

462. Reproductive Physiology of Domestic Animals. (3:3:2) Prerequisites: AnSci. 112 and 152 or consent of instructor.
Physiology of gametogenesis; sexual maturation; fertilization; embryonic development; chemistry of the endocrine systems; and mechanisms of hormone action.

464. Artificial Insemination. (2:1:3)
Artificial insemination and pregnancy diagnosis.

492. Seminar. (1:1:0) Prerequisite: AnSci. 292.
Critical examination of current literature in animal science and industry.

☐ **Statistics 501. Statistics for Research Workers 1.** (5:4:3)

507. Animal Nutrition. (3:3:0) Prerequisites AnSci.

207; Chem. 252 or equivalent. Recommended: Chem. 281.

Functions of nutrients in metabolism, measuring feed values, assessing nutrient requirements.

508. Animal Nutrition Laboratory. (2:1:3) Prerequisite: AnSci. 507.

Sampling methods, chemical analysis of feeds and blood, digestion trials; classical nutritional deficiencies, and research techniques.

515. Genetics of Livestock Improvement. (3:3:0) Prerequisites: Bot. 370, Stat. 221 or equivalent.

Emphasis on selection methods and mating systems

520. (AnSci.-AgEcon.-Range) Management of Ranch Resources. (3:2:2) Prerequisites: senior or graduate standing and consent of instructor

Commercial ranch case study. Management plan developed, consisting of maximum profit practices and enterprise combinations.

525R. Feed Manufacturing. (3:2:2 ea.)

Business, scientific, and technical principles of feed production.

☐ **Statistics 531. Experimental Design.** (3:3:0)

☐ **Statistics 536. Regression Analysis.** (3:3:0)

560. Advanced Dairy Production. (3:3:0) Prerequisite: AnSci. 361.

Physiology and biochemistry of lactation, genetic improvement, dairy layout design, disease control, nutritional requirements. Offered alternate years.

591R. Selected Topics in Animal Science (½-2:2:4 ea.) Prerequisite: consent of instructor.

595R. Special Problems in Animal Science. (1:0:Arr.) Prerequisite: consent of instructor.

599R. Cooperative Education. (Arr.) Prerequisite: application approval from department cooperative education committee.

On-the-job experience in livestock or meat production practices, veterinary medicine, or research. On- or off-campus opportunities.

692R. Seminar. (1:1:1 ea.)

699R. Thesis for Master's Degree. (1-9:0:0)

Anthropology and Archaeology

Professors: Christensen, Myers (Chairman, 150 MSRB).
Associate Professors: Berge, Matheny.
Assistant Professor: Warren.
Instructor: Hawkins.

Undergraduate Program

Anthropologists study rituals and beliefs, systems of kinship and marriage, political and legal institutions, economics, languages, and other aspects of living human groups. The ultimate aim of these studies is to discover what, if any, are the common and general features of the social life and culture of all human societies. Many anthropologists have a keen interest in applying this information to current human problems. Anthropologists also investigate the variations of man as a biological species, both from the evidence of his physical remains and from the evidence of the physical characteristics of living peoples. Anthropology, therefore, has affinities with both the biological and social sciences, but its dominant interest is in the workings of culture and the structure of society and it shares much of its theory and method with sociology and psychology.

Archaeologists, on the other hand, study materials which imply man's previous accomplishments and the conditions under which he lived. This study of the products of man's industry in bygone ages also invites the contributions of specialists from the biological and physical sciences to accomplish its objectives. These specialists provide techniques (e.g., analysis of pollens, bones, climatic conditions, etc.) for the recovery of information about past environmental conditions and how these were changed by man. Anthropological studies of contemporary and historical societies and culture also provide a framework for drawing inferences about man's earlier past.

Such evidence adds new dimensions to our understanding of much of the unwritten past as well as the ancient and more recent historical periods. Thus, archaeology is both a social and historical science and has much in common with documentary history, humanistic disciplines, and other social sciences as well as affinities with the physical and biological sciences.

Anthropology and archaeology are closely related disciplines and complement each other in a number of ways. Anthropologists provide archaeologists with data and concepts helpful in interpreting the remains of ancient peoples. Archaeologists, in turn, supply anthropologists with evidences of the cultural patterns and physical variations of man.

Career Opportunities

Social anthropology is a behavioral science, and qualified persons in this field have found employment as college teachers; with governmental and commercial agencies (especially those operating in non-Western countries); and in personal relations, hospital administration, social work, and advertising research. Professional qualifications as an anthropologist require graduate training, ideally to the Doctor of Philosophy degree. Students from this department with high academic standing have been admitted to graduate programs in some of the best graduate schools both in this country and abroad.

Archaeology offers professional careers as college teachers; as museum curators, directors, and technicians; with federal, state, and local survey and restoration projects; as state archaeologists; and in park and recreational operations. Most of these positions require graduate training at least to the master's degree. A considerable number of students graduating in archaeology have pursued advanced study at other universities.

Study in this department is designed primarily to prepare students for graduate work at other universities, although an increasing number of students are finding employment in these fields with the bachelor's or master's degrees.

Departmental Programs

The successful completion of this major leads to the Bachelor of Science degree in anthropology and archaeology. Students majoring in this department are not required to have a minor field for graduation but will be counseled by their advisers (whom they are urged to consult early in their program and regularly thereafter) concerning complementary courses to be taken in other departments of the University. It is recommended that majors planning graduate study complete Engl. 316, Technical Writing.

The department emphasizes the fields of social anthropology, prehistoric archaeology, and historic archaeology, and the undergraduate curriculum is organized into four programs. Students choosing this major may select one of the following programs: general anthropology and archaeology, social anthropology, prehistoric archaeology, or historic archaeology.

General Anthropology and Archaeology. Students selecting the program in general anthropology and archaeology will prepare themselves with the broadest possible background offered at this university in social anthropology, physical anthropology, linguistics, prehistoric archaeology, and historic archaeology. Such a background is of value to students planning graduate work in schools stressing the global concept of anthropology and those planning to emphasize archaeology in their professional careers. This program requires a total of 36 semester hours of credit and must include Anthro. 105 and 120, Ling. 324 or 325, and 10 additional semester hours of anthropology credit; Archaeol. 101, 102, and 280, and 8 additional semester hours of archaeology credit. Students who choose this program and who plan to specialize in archaeology in graduate school should include Archaeol. 455R in these additional hours.

Social Anthropology. A student who selects the program in social anthropology should plan to obtain a graduate degree at another university, ultimately to do a field-work project, and to become a professional social anthropologist. The program in social anthropology requires a total of 36 semester credit hours and must include Anthro. 105, two courses from those numbered 317 through 350, two courses from those numbered 430 through 433, and two courses from those numbered 480, 481, and 490R. A bachelor's thesis is also required of all students in this program who plan to pursue graduate study. This thesis may grow out of a field experience in a rural village, among an American Indian people or with other ethnic groups, or it may be based on a library research project. These students should register for Anthro. 499 during their senior year to obtain thesis credit. Students will be required to defend their thesis and may be granted from 1 to 3 credit hours for its successful defense. It is also suggested that majors in this program take Sociol 411 and 552 and consider the offerings in Ling. 301R and 325.

Prehistoric Archaeology. Students entering the program in prehistoric archaeology should plan to become professional anthropologists. Emphases in this program are on the culture history of the American Southwest and Mesoamerica. This program requires 36 hours of credit which must include Anthro. 105 and 120; Archaeol. 101, 102, 155, 220R, 231, 241, 455R or equivalent field experience; and at least two upper-division courses in prehistoric archaeology. It is also recommended that students in this program take relevant courses in other departments chosen in consultation with their advisers.

Historic Archaeology. Students who select the program in historic archaeology should plan to become historians as well as archaeologists. Special emphasis in this program is given to the fields of historic Near Eastern (particularly biblical) and historic Mesoamerican archaeology (the ancient history and civilization of Middle America in the light of archaeology in conjunction with the early historical writings). This program requires 36 semester hours of credit and must include Archaeol. 101, 102, 155, 220R, 231, 241, and 280; at least three upper-division courses in historic archaeology; and Anthro. 105 and 120. It is recommended that at least two courses be taken from among the following in other departments: Hist. 110, 300, 304, and 307; Geog. 301; RelA. 501 and 514; Hebrew 101 and 102; Greek 101 and 102; and Latin 101 and 102.

Minors Offered

Minors in both anthropology and archaeology are offered for students majoring in other departments. An undergraduate minor in anthropology requires the completion of Anthro. 105 and 120, either 480, 481, or 490R, and additional courses to make a total of 16 semester hours. An undergraduate minor in archaeology requires Archaeol. 101, 102, and 103, and 9 additional hours of archaeology credit.

Graduate Program

The graduate major and minor in archaeology are also offered. The graduate major, leading to the Master of Arts degree, further prepares the student for teaching, research, and other employment in this field. The best preparation for a professional career in archaeology is the Doctor of Philosophy degree.

For the master's degree in archaeology, at least 15 semester hours of graduate credit are required in this subject, with at least 9 additional semester hours in a minor field approved by the department, as well as an acceptable thesis.

Courses not offered one year are normally given the next year.

Examination. A qualifying examination must be taken by September 30 for students entering the program Fall Semester and by January 31 for students entering Winter Semester unless this examination has already been taken at the end of the senior year by students entering the Graduate School from the undergraduate program at Brigham Young University.

Application Consideration Dates. Same as Graduate School deadlines

Entry Times. Fall and Winter semesters only.

Master of Arts

Prerequisite. Undergraduate major in archaeology or equivalent.

Fields. Historic archaeology; prehistoric archaeology.

Minors Permissible. Any established minor in the humanities or the sciences; Option 2.

Requirements. Minimum of 15 semester hours in archaeology and a minor, plus the thesis (6-hr. min.—699R); foreign language proficiency when essential to the student's field of research; and a comprehensive examination prior to undertaking thesis research.

Required Courses. Archaeol. 580R, 590R; at least one of the following area courses: 515, 545, 555; and 455R or comparable field experience.

This department is affiliated with the BYU-New World Archaeological Foundation, which affords some graduate students field experience in Mesoamerica.

The program is designed to prepare students for study toward the Ph.D. degree and a professional career in archaeology.

Anthropology Courses

101. Introduction to Anthropology. (3:3:0)
Concept of culture, continuity of culture, human variation, primitive society, distribution of linguistic groups.

105. Introduction to Social Anthropology. (3:3:0) (G-SS)
Development, scope, concepts, and methods. Social organization: kinship, marriage, religion, values, social control.

120. Physical Anthropology. (3:3:0) (G-SS)
Human biology, emphasizing fossil man and human variation.

317. Native Peoples of North America. (3:3:0) (G-SS)
Adaptation to environment, social organization, beliefs, and values of North American Indians.

318. Native Peoples of Middle America. (2:2:0) (G-SS)
Indian peoples of Mexico, Central America, and the West Indies at European contact.

319. Native Peoples of South America. (2:2:0) (G-SS)
Indian peoples of South America at European contact.

320. The North American Indian Today. (2:2:0) (G-SS)
Present conditions and problems confronting major Indian groups in North America.

☐ **Linguistics 324. Introduction to Linguistics (Traditional).** (3:3:0)

☐ **Linguistics 325. Introduction to Linguistics (Modern).** (3:3:0)

326. Mexican and Central American Societies and Cultures Today. (3:3:0) (G-SS)
Historical antecedents, politico-economic structure, stratification in ideology and reality, ethnic and urban life styles, land tenure, migration, peasantry, marriage, family, education, religion, revolution, terrorism.

330. Peoples of Africa. (3:3:0) (G-SS)
Peoples south of the Sahara. Ecology, social organization, beliefs, values

340. Peoples of the Middle East. (3:3:0) (G-SS)
Emphasizes social systems.

350. Peoples of South and East Asia. (3:3:0) (G-SS)
Emphasizes cultural traditions.

355. Chinese Culture and Society. (3:3:0)
Discussions of Chinese institutions, both traditional and modern. Viewed as models influential throughout East Asia.

360. Nomadic Culture of Inner Asia. (3:3:0)
Analysis of traditional Mongol, Turkic, Tibetan social, economic, and political institutions and daily life. Also, cultural changes over time.

370. The American Culture. (3:3:0) (G-SS)
Life in the United States, viewed in the light of methods and concepts of anthropology.

☐ **English 391. Studies in Folklore.** (3:3:0)

430. Moral and Ritual Institutions. (3:3:0) (G-SS)
Religion, magic, witchcraft, sorcery, divination, mythology, ritual and morality, cosmology, totemism, taboo, sacrifice. Comparative religion.

431. Kinship, Marriage, and the Family. (3:3:0) (G-SS)
The kinship system, kinship and social organization, and underlying principles. Marriage forms, observances, and explanations.

432. Political and Legal Institutions—Primitive Peoples. (3:3:0) (G-SS)
Stateless societies; primitive states; kinship, chiefship, leadership, councils; politics, law, ritual, and warfare.

433. Economic Institutions. (3:3:0) (G-SS)
The social framework of production, consumption, and exchange in nonindustrial societies. Technology, wealth, capital, labor, land tenure, property.

480. Theoretical Social Anthropology. (3:3:0)
Development of scientific social anthropology since 1850, emphasizing modern trends in theory.

481. Field Methods in Social Anthropology. (2:2:1)
Interrelates field methods and theory; the development of field techniques; field excursion.

490R. Seminar. (2:2:0 ea.) (G-SS)
Special topics in theory, methodology, or cultural area.

496R. Social Anthropological Research Experience. (1-12:Arr:Arr. ea.)
Independent field or library research in student's chosen area or faculty-supervised fieldwork with discussion meetings at site.

499. Bachelor's Thesis. (1-3:Arr.:Arr. ea.)
Writing and defense of a thesis resulting from research conducted in Anthro. 496R.

☐ **Sociology 552. Personality: Culture and Society.** (3:3:0)

Archaeology Courses

101. Introduction to Archaeology: Old World. (3:3:0) (G-SS)
Fundamentals of archaeology and known antiquities and archaeological history of the Eastern Hemisphere.

102. Introduction to Archaeology: New World. (3:3:0) (G-SS)
Further study of methods and known antiquities and archaeological history of the Western Hemisphere.

103. Introduction to Archaeology: Field Methods. (1:1:0)
Archaeological tools and methods used in the field; three-day field trip. Fee.

155. Primitive and Ancient Technology. (2:1:2)
The means by which material objects were produced in early times, experimental reproduction of artifacts.

220R. History and Theory of Archaeology. (2:2:0 ea.) Prerequisites: Archaeol. 101, 102.
Development of archaeology as a scientific discipline; emphasis alternately on prehistoric and historic archaeology.

231. Survey and Excavation Techniques. (2:1:2) Prerequisite: Archaeol. 220R.
Practical application of field techniques.

241. Laboratory and Interpretative Methods. (2:1:2) Prerequisite: Archaeol. 231.
Practical application of laboratory techniques.

251. Bone Identification Laboratory. (2:1:2)
Determining the identity, sex, and age of human skeletal remains.

280. Archaeology and the Scriptures. (3:3:0) (G-SS)
Introduction to study of the Hebrew-Christian and LDS scriptures in the light of archaeology.

300. Prehistoric Archaeology of the Old World. (3:3:0) (G-SS)
Culture-history of the Eastern Hemisphere to the rise of civilization.

310. Historic Near-Eastern Archaeology. (3:3:0) (G-SS) Prerequisite: Archaeol. 280.
Archaeology of the Near East as it relates to ancient and biblical history.

318. Classical Archaeology. (3:3:0) (G-SS)
Major excavations and antiquities of the Mediterranean region verifying and illustrating Graeco-Roman history.

350. Archaeology of Middle America 1. (3:3:0) (G-SS) Prerequisite: Archaeol. 280.
Archaeological history of central Middle America, partially correlated with the chronicled history of pre-Spanish times.

355. Archaeology of Middle America 2. (3:3:0) (G-SS) Prerequisites: Archaeol. 280, 350.
Further study of the archaeological and chronicled history of Mesoamerica, especially the "preclassic" (Book of Mormon) period.

365. Archaeology of South America. (3:3:0) (G-SS)
Archaeological history of South America—in Peru correlated with the chronicled history of pre-Spanish times.

375. Prehistoric Archaeology of North America. (3:3:0) (G-SS)
Prehistory of America north of Mexico.

380. Historical Archaeology of North America. (3:2:2) (G-SS)
Techniques, data, and aims of archaeological research at historic North American sites.

415. Southwestern Archaeology. (3:2:2) (G-SS)
Prehistoric culture-history of southwestern United States, emphasizing chronology and culture classification.

420. Archaeology of Utah. (3:3:0) (G-SS)
Cultural developments in prehistoric and pioneer Utah, emphasizing cultural chronology and classification.

455R. Field School of Archaeology. (6:8:25 ea.)
Training in southeastern Utah in excavation and survey techniques and laboratory analyses. Fee.

470. Museology. (2:2:0)
Museum organization as an educational and research facility.

515. Advanced Southwestern Archaeology. (3:2:2) (G-SS)

545. Advanced Near-Eastern and Mediterranean Archaeology. (3:2:2) (G-SS)

555. Advanced Mesoamerican Archaeology. (3:2:2) (G-SS)

570. Advanced Museology. (3:1:4)

580R. Theory and Research Design. (3:3:0 ea.)

590R. Seminar. (1-3:1-3:0 ea.)

610. Classification of Material Culture. (3:2:4)

671. Interpretative Methods. (2:2:2)

695R. Library Research. (2:0:6 ea.)

696R. Museum Studies. (2:0:6 ea.)

697R. Field Research. (1-10:0:9-30 ea.)

699R. Thesis for Master's Degree. (6-9:Arr.:Arr. ea.)

Art and Design

Professors: Breinholt, Burnside, Darais, Gunn, Johansen, F. Magleby, Myer, Turner, Weaver, Wilson.
Associate Professors: Allen, Anderson, J. Marshall, Tippetts, Whitaker.
Assistant Professors: Barsch, Christensen, Fletcher, R. Marshall, Raty, Rosine, Takasaki.
Instructors: Goodliffe, Hamilton, Raish.
Special Instructors: Canaan, J. Christensen, Lee, M. Magleby, Riggs, Shepard, Wade.

Undergraduate Program

The Department of Art and Design serves two main purposes: (a) the preparation of creative leaders in the various fields of the plastic and graphic arts and (b) the building of an appreciative audience for these arts.

Major programs are offered which lead to careers in art education, art history, graphic design, industrial design, painting, printmaking, sculpture, ceramics, and crafts. Four degrees are offered: the Bachelor of Arts, the Bachelor of Fine Arts, the Master of Arts, and the Master of Fine Arts. The Bachelor and Master of Fine Arts programs place an emphasis on performance and professional preparation.

The Master of Fine Arts degree is a two-year program offering specialities in ceramics, crafts, painting, printmaking and sculpture. After students are admitted to these programs by a portfolio, they must complete a one-man show, a terminal-project show, and a scholarly report of their graduate art activities.

A collection of more than seven thousand original works of art by both American and European artists is owned by the University. Frequently changing exhibitions of work by contemporary artists also contribute to general appreciation and to the instructional program. Exhibitions of students' work are held regularly for analysis and criticism and for furthering professional growth. The department sponsors special lectures, demonstrations, and trips to galleries as cultural enrichment activities.

Bachelor of Arts

A liberal arts degree is offered to students completing the University's general education requirements detailed in the general education program sections of this catalog. The Department of Art and Design offers two fields of emphasis. A student may elect to emphasize studio work or art history to complete a Bachelor of Arts Degree.

The requirements for an art studio emphasis are as follows:

Foundation—ArtDs. 116, 117 (taken in sequence)

Fundamentals—At least 18 hours from ArtDs. 236R, 241R, 327R, 333R, 350R or 351R, 356R, 358R, 359R, 361R

Art History—At least 12 hours (ArtDs. 311 and 312 recommended as preface courses)

Art Electives—At least 12 hours (additional work is urged; see your adviser)

The requirements for an art history emphasis, structured to prepare a student for graduate studies on a competent level, are as follows:

Art History—32 hours

Cognate Field—16 hours (history, archaeology, literature, music history, or others as approved)

Language—14 hours (French or German recommended)

Studio Experience—6 hours

Bachelor of Fine Arts

A degree with emphasis on a professional specialty is offered to students to prepare them for a career in one of the disciplines of the arts. Students may enter the BFA program after successfully completing the foundation requirements and having their portfolio accepted by the faculty. Students should apply to enter the program before the end of their sophomore year so that two years of study can be completed before graduation. Before acceptance, students must select a specialty; and after acceptance, they will be assigned to an adviser who will follow their progress throughout the program. In the senior year students will complete a terminal project in the chosen area of concentration; that project may be retained by the department.

Specialties Offered in the BFA Program under the Art Emphasis

Ceramics
ArtDs.: 116, 117, 311, 312, 320R, 321R, 356R, 359R, 361R, 420R, 421R, 459R, 497R, 499

Crafts
ArtDs.: 116, 117, 311, 312, 320R, 321R, 350R or 351R, 356R, 361R, 420R, 461R, 462R, 497R, 499
CloTx.: 221
Indus.: 100, 129

Painting
ArtDs.: 116, 117, 311, 312, 320R, 321R, 322R, 327R, 333R, 350R or 351R, 356R, 390, 420R, 421R, 422R, 427R, 428R, 429R, 433R, 497R, 499

Printmaking
ArtDs.: 116, 117, 241R, 311, 312, 320R, 321R, 322R, 327R, 333R, 350R or 351R, 356R, 361R, 420R, 421R or 422R, 428R, 450R, 497R, 499

Sculpture
ArtDs.: 116, 117, 311, 312, 320R, 321R, 322R, 350R or 351R, 356R, 358R, 359R, 361R, 401, 412, 420R, 456R, 458R, 497R, 499
Zool.: 260

Specialties Offered in the BFA Program under the Design Emphasis

Graphic Design
ArtDs.: 116, 117, 241R, 311, 312, 320R, 321R, 341R, 342R, 412, 420R, 441R, 442R, 497R
Comms.: 230, 263, 264
Indus.: 250, 453
DesTech.: 111

Illustration
ArtDs.: 116, 117, 241R, 311, 312, 320R, 321R, 322R, 327R, 333R, 341R, 342R, 420R, 421R, 422R, 428R, 441R, 442R, 497R
Comms.: 230, 263

Industrial Design
ArtDs.: 116, 117, 236R, 237R, 238R, 240R, 241R, 311, 312, 320R, 336R, 337R, 338R, 412, 436R, 437R, 438R, 497R
DesTech.: 111
MechEng.: 572
OrgB.: 321
Zool.: 250

Art Education

Prospective art teachers for secondary schools should be majors in the Art and Design Department under the College of Fine Arts and Communications. To coordinate the candidates' training and certification for teaching, supervision of records and program direction is under the TCO (Teacher Clearance Office). All departments, therefore, list their departmental offerings with the College of Education. Details for credential requirements are listed in the catalog under the Education section.

Students majoring in art education may select either of two options.

1. **Requirements for the composite teaching major** can be satisfied by completing courses as listed in the following areas:

Foundation—(10 hours) ArtDs. 116, 117 taken in sequence

Graphic Fundamentals—At least 9 hours from ArtDs. 241R, 327R, 333R, 350R or 351R

Plastics Fundamentals—At least 6 hours from ArtDs. 356R, 358R, 359R, 361R

Design Fundamentals—(3 hours) ArtDs. 320R

Art History—(at least 12 hours) ArtDs. 311 and 312 required as prerequisite to other courses

Dominant and Supporting Fields—Complete 12 hours in one of the following as a dominant field and 6 hours in each of the other two:

a. **Drawing and Painting**—ArtDs. 321R, 322R, 421R, 422R, 427R, 428R, 450R
b. **Plastics**—ArtDs. 456R, 458R, 459R, 461R, 462R
c. **Graphics**—ArtDs. 341R, 441R, Comms. 263, 264, 368R, 369, IntEnv. 240, 340.

2. **Requirements for the basic teaching major** can be satisfied by completing courses as listed in the following areas:

Foundation—(10 hours) ArtDs. 116, 117 taken in sequence

Graphic Fundamentals—At least 9 hours from ArtDs. 241R, 327R, 333R, 350R or 351R

Plastics Fundamentals—At least 6 hours from ArtDs. 356R, 358R, 359R, 361R

Art History—(at least 12 hours) ArtDs. 311 and 312 required as prerequisite to other art history courses

Electives—At least 6 hours from ArtDs. 341R, and 400 series courses for which prerequisites have been satisfied, or communications photography courses.

An art minor for the secondary level is offered. Required classes are listed in the catalog under Education.

The sequence of education courses begins with SecEd. 276 in the sophomore year, unless a special program is approved by the TCO. See details listed under the Secondary Education and Foundations section of this catalog.

Art education majors may participate in the BFA program. It should be understood, however, that the BFA is a specialized course of study and does not provide the breadth of experience necessary for successful teaching in secondary schools. In consideration of this, the student should plan to complete any art education requirements not satisfied by the BFA program elected.

Courses Repeated for Credit

Course numbers followed by an R may be repeated for credit. Students will be expected to reach defined levels of competency in any course before being allowed to enroll in higher courses of the same sequences. It may, therefore, be necessary for a student to repeat a 200-or 300-level class before additional studies in more advanced classes. However, if students can exhibit the expected competencies either before or during the class, they can receive a waiver for that course.

Grading Policies

The faculty of the department have been chosen because of their professional expertise and background. The majority of the classes offered by the department are studio classes and, as such, will be structured to encourage the students to create artistic work at the upper limits of their capabilities. Grading of creative work will be based on a professional evaluation by the faculty member concerned. Courses receiving a D grade cannot be applied toward major credit.

Graduate Program

Programs. Master of Arts (M.A.), Master of Fine Arts (M.F.A.). Applicants should note the difference between the Master of Arts degree and the Master of Fine Arts degree. Applicants for admission to the Master of Fine Arts degree program must submit a portfolio of their art work. This should be deposited with the Art and Design Department no later than the application deadlines listed below. Slides will be acceptable for heavy or bulky works.

Entrance Examination Required. Interview with a committee of the graduate faculty during registration.

Application Consideration Dates. April 1 for Spring and Summer Terms and Fall Semester, October 15 for Winter Semester.

Entry Times. Any regular registration.

Master of Arts

Prerequisites. Undergraduate minor in art or its equivalent; proficiency in basic drawing and design fundamentals in two-dimensional and three-dimensional work; at least 20 semester hours of upper-division work, including 12 semester hours in art history.

Fields. Ceramics, crafts, painting, printmaking, sculpture.

Minors Permissible. One of the above areas may be selected as a minor.

Requirements. Minimum of 24 semester hours plus thesis (6-hr. min). At least 15 semester hours, exclusive of thesis, must be in one of the fields listed above and at least 9 semester hours in a minor field.

Required Courses. Four semester hours in ArtDs. 600R.

The Master of Arts degree is intended to stress the academic thrust of art.

Master of Fine Arts

Prerequisites. Undergraduate minor in art or its equivalent; proficiency in basic drawing and design fundamentals and in two- and three-dimensional work. At least 20 hours of upper-division work, including 12 hours in art history. An area of concentration must be chosen from the following list and indicated on the application. Before being admitted, the applicant must submit a portfolio of work demonstrating the level of performance, particularly in the areas of concentration indicated. If an applicant has already received an M.A. degree from an accredited institution, up to 30 hours of that program may be accepted by the department and applied to the MFA program. However, a portfolio of work in the applicant's area of concentration is required, which may take the place of the second semester one-man show described. In addition, for graduation, the candidate will be required to have the equivalency of the hours in each area indicated.

Fields. Ceramics, crafts, painting, printmaking, sculpture.

Semester Hour Requirements. The applicant must complete the following 60 hours of course work, of which 30 must be in residency. The major area must be chosen from the five previously listed. The minor area may be chosen in any field approved by the advisory committee.

Area of concentration	28
Minor area (as approved by committee)	12
Advanced art history (ArtDs. 600R)	8
Advanced design (ArtDs. 620R)	4
MFA project (ArtDs. 697R)	8

Further Requirements

1. At the end of the second semester of work, the candidate will present a one-man show of work com-

pleted to date in the graduate program. This show will be used by the graduate faculty to evaluate the progress of the student. A satisfactory evaluation is necessary before the student can continue in the program.

2. At the beginning of the third semester, the candidate will submit a proposal for a terminal project. This proposal must have the approval of the student's committee before it can be started.
3. In sufficient time to meet all graduation deadlines, the student will present an MFA Terminal Project Show, in which the terminal project will be exhibited. This will be viewed formally by the graduate faculty and must be accepted and approved by them before the student will be cleared for graduation. Part of this terminal project may be retained by the department.
4. Although a thesis is not required, an orderly record will be maintained by the candidate in which is recorded any personal statements, photographs, and other material indicating the student's artistic development during the time spent in the program. It must include an illustrated account of the MFA Terminal Project completed by the student. It will be titled Terminal Project Report.

Courses

101. Introduction to Art. (2:2:0) (G-HA)
Basic understanding of art processes through lectures, demonstrations, and studio and gallery visits.

102. Basic Design for Nonmajors. (2:1:3) (G-HA)
Principles and elements of all artistic and design efforts.

103. Drawing for Nonmajors. (2:1:3) (G-HA)
Basic drawing techniques.

104. Sculpture for Nonmajors. (2:1:3) (G-HA)
Basic techniques of modeling clay and carving stone.

105. Ceramics for Nonmajors. (2:1:3) (G-HA)
Basic methods and processes of forming and glazing original, expressive, and well-designed pottery objects.

106. Crafts for Nonmajors. (2:1:3) (G-HA)
Various media and methods used to create craft objects.

107. Painting for Nonmajors. (2:1:3) (G-HA)
Basic media and techniques of painting.

108. Watercolor for Nonmajors. (2:1:3)
Basic media and techniques of watercolor.

109. Design for Technology. (2:2:2) (G-HA)
Basic design principles as related to industrial art and technology.

116. Foundation 1. (5:2:8)
Theory and application of fundamental art and design principles.

117. Foundation 2. (5:2:8) Prerequisite. ArtDs. 116.
Further study in theory and application of art and design principles.

204R. Advanced Sculpture for Nonmajors. (2:1:3 ea.) (G-HA)
Extended work in modeling and carving techniques.

205R. Advanced Ceramics for Nonmajors. (2:1:3 ea.) (G-HA) Prerequisite: ArtDs. 105
Advanced methods of creating original pottery objects, including glaze mixing, kiln firing, and research techniques.

206R. Advanced Crafts for Nonmajors. (2:1:3 ea.) (G-HA)
Further experience in advanced craft techniques.

207R. Advanced Painting for Nonmajors. (2:1:3 ea.) (G-HA)

208R. Advanced Watercolor for Nonmajors. 2:0.10 ea.) Prerequisite: ArtDs. 108.
Advanced techniques.

234. Philosophy of Contemporary Design. (3:3:0)
Contemporary architecture and design, environmental problems within the community.

236R. Industrial Design 1. (3:4:0 ea.) Prerequisites: ArtDs. 116, 117.
Industrial design in modern society. Stimulation of functional and aesthetic awareness.

237R. Presentation 1. (2:10:30) Prerequisites: ArtDs. 116, 117.
Perspective drawing. Beginning presentation of methods and media, emphasizing interior and exterior.

238R. Synthesis of Design 1. (1:2:0 ea.)
Interrelating environmental studies, design, and various professional specializations.

240R. Shop Methods and Materials. (2:1:3 ea.) Prerequisite: ArtDs. 117 or its equivalent.
Basic woodworking, metalworking, welding, and plastic methods, using workshop tools and machines. Basic production techniques, processes, and materials.

241R. Graphic Design 1. (3:4:0 ea.) Prerequisites: ArtDs. 116, 117.
Lettering and designing for commercial purposes.

310. Survey of Western Architecture. (3:3:0) (G-HA)
The evolutionary development of Western architecture from Greek through contemporary trends.

311. Survey of Art and Architecture. (3:3:0) (G-HA)
Art and architecture of the Western world, covering periods from Primitive to Renaissance.

312. Survey of Art and Architecture. (3:3:0) Home Study also. (G-HA)
Art and architecture of the Western world, covering periods from Renaissance to Contemporary.

313. Survey of Oriental Art and Architecture. (3:3:0) (G-HA)
Major periods and dynasties of the Orient from ancient to modern times.

320R. Fundamentals in Design. (3:4:0 ea.) Prerequisites: ArtDs. 116, 117.
Art structure as essential to self-expression. Significant examples of art history

321R. Fundamentals in Drawing. (3:4:0 ea.) Prerequisites: ArtDs. 116, 117.
Drawing as a graphic form of self-expression. Emphasizes the personal statement in response to various experiences and motifs.

322R. Fundamentals in Figure Drawing. (3:4:0 ea.) Prerequisites ArtDs. 116, 117.
Drawing the human figure, emphasizing structure and individuality of expression.

324. Recreational Art-Crafts. (2:0:4)
Creative approach to crafts, design, lettering, weaving, papier-maché clay, puppetry, etc. Theory of art education for camp and playground.

326. Art for Elementary Teachers. (4:3:4)
Role of art in public schools; basic art education theory, classroom activities, and aesthetic experiences for teacher growth.

327R. Fundamentals in Oil Painting. (3:4:0 ea.) Prerequisite ArtDs. 117.
Oil painting from landscapes and still-life objects, developing the individual expressive capacity of the student.

333R. Fundamentals in Watercolor. (3:4.0 ea.) Prerequisite: ArtDs. 117.
Basic skills in watercolor paintings from landscape and still-life objects, emphasizing use of transparent watercolors.

336R. Industrial Design 2. (3.4:0 ea.) Prerequisites. ArtDs. 116, 117, 234, 236R, Indus. 100, 129; DesTech. 111
Planning and making products, emphasizing functional improvement and visual appeal.

337R. Presentation 2. (2:10:30) Prerequisite: ArtDs. 237R.
Advanced media techniques emphasizing interior environment and product presentation.

338R. Synthesis of Design 2. (1-2:2:0 ea.) Prerequisite: consent of instructor.
Interrelating environmental studies and design, and various professional specializations.

341R. Graphic Design 2. (3:3:0 ea.) Prerequisite: ArtDs. 241.
Creation of the idea and organization of visual elements for commercial design.

342R. Illustration. (2:3:0 ea.) Prerequisites: ArtDs. 241R, 321R, 322R.
Introduction to editorial and advertising illustration, exploration of tools and media, visualization of the idea, approaches to rendering.

350R. Fundamentals in Printmaking: Intaglio and Silkscreen. (3:4:0 ea.) Prerequisite: ArtDs. 117.
Silkscreen and intaglio fine printmaking, based on traditional and contemporary concepts, materials, and procedures.

351R. Fundamentals in Printmaking: Lithography and Relief. (3:4:0 ea.) Prerequisites: ArtDs. 116, 117.
Traditional and contemporary concepts of materials and procedures.

356R. Fundamentals in Sculpture: Traditional Methods in Modeling, Carving, and Casting. (3:1:5 ea.) Prerequisites: ArtDs. 116, 117.
Modeling the human figure in clay, plus study of anatomy; carving in stone or wood; and techniques in reproduction of clay models.

358R. Fundamentals in Sculpture: Contemporary Methods in Fabrication-Construction. (3:1:5 ea.) Prerequisites: ArtDs. 116, 117.
Laminating, welding, casting, and joinery in wood, metals, and plastics.

359R. Fundamentals in Ceramics. (3:2:4 ea.) Prerequisites: ArtDs. 116, 117.
Basic methods of creating from clay, including designing, throwing, hand forming, decorating,, glazing, and firing techniques.

361R. Fundamentals in Crafts. (3:1:5 ea.) Prerequisites: ArtDs. 116, 117.
Creative design in metal, wood, leather, mosaic, textile, and other media.

390. Color. (2:2:0)
Analysis of color theories, including intuitive and structured application.

395R. (ArtDs.-Comms.) The Creative Design. (3:3:0 ea.) (G-HA) Prerequisite: consent of instructor.
Introduction to the philosophies and methodologies of the creative design approach to solving problems, plus comprehensive experiences to develop the creative productivity of student thinking.

398. Art Historical Methodology, Research, and Writing. (3:2:4) Prerequisites: ArtDs. 311, 312.
Necessary skills to adequately research and write in the field of art history.

399R. Cooperative Education Internship (1-8:0:0) Prerequisite: Consent of instructor.
On-the-job experience. Project approval required prior to registration.

400R. Individual Study in Art History. (1-3:Arr.:Arr. ea.) (G-HA) Prerequisites: ArtDs. 311, 312, 398.

401. Ancient and Primitive Art. (3:3:0) (G-HA)
History of ancient art: Egypt, Mesopotamia, and Greece. Primitive sculptures: African Negro, Pacific Islands, American Indian, and pre-Columbian.

402. Greek Art and Architecture (3:3:0) (G-HA)
History and appreciation of Greek art, with consideration of the formative cultures.

403. Roman Art and Architecture. (3:3:0) (G-HA)
Art and architecture of the Etruscans, Romans, and Early Christians.

405. Medieval Art. (3:3:0) (G-HA)
Major medieval monuments in architecture, sculpture, and painting from the early Christian through the Romanesque and Gothic periods.

406. Italian Renaissance Art. (3:3:0) (G-HA)
Major artists, monuments, and influences of the Renaissance.

407. Northern Renaissance. (3:3:0) (G-HA)
Art from Van Eyck to Bruegel. Taught alternate years with ArtDs. 406.

408. Baroque Art. (3:3:0) (G-HA)
History and appreciation of baroque painting, sculpture, and architecture.

409. American Architecture and City Planning. (3:3:0) (G-HA)
America's architectural dependency and eventual emergence as the world leader.

410. American Art. (3:3:0) (G-HA)
American painting, architecture, and sculpture from the seventeenth century to the present.

411. Nineteenth-Century European Art. (3:3:0) Home Study also. (G-HA)
History and appreciation of nineteenth-century art in Europe and America.

412. Contemporary Art. (3:3:0) (G-HA)
The rise and progress of contemporary art in Europe and America.

415R. Special Topics (3:3:0 ea.) (G-HA)
Topics of special student interest, centered on strengths of visiting faculty, BYU Study Abroad Programs, or other significant art history projects of a group nature.

420R. Design Studio. (3:1:5 ea.) Prerequisites: ArtDs. 320R; admission by portfolio.
Advanced design problems in various media.

421R. Drawing Studio. (3:1:5 ea.) Prerequisites: ArtDs. 321R or 322R; admission by portfolio.
Development of individual expressive strengths.

422R. Figure Drawing Studio. (3:1:5 ea.) Prerequisites: ArtDs. 322R; admission by portfolio.
Development of individual drawing skill related to human figure.

425. Art for Special Education. (4:2:4)
Theory and philosophy in art education and application of these to the needs of exceptional children. Includes lab.

427R. Advanced Oil Painting Studio. (3:1:5 ea.) Prerequisites: ArtDs. 327R; admission by portfolio.
Advanced work in painting.

428R. Figure Painting Studio. (3:Arr.:Arr. ea.) Prerequisites: ArtDs. 322R, 327R; admission by portfolio.
Oil painting from the model, emphasizing design and development of an expressive style.

429R. Landscape and Still Life Studio. (3:1:5 ea.) Prerequisites: ArtDs. 327R; admission by portfolio.
Emphasis on individual expressive creativity.

433R. Watercolor Studio. (3:1:5 ea.) Prerequisites: ArtDs. 333R; admission by portfolio.
Advanced work in watercolor theory and practice. Opportunities for projects in various aqueous media.

436R. Industrial Design 3. (3:2:6 ea.) Prerequisites: ArtDs. 336R, 337R; consent of instructor.
Advanced work in all phases of design, specializing in product, transportation, and environmental areas.

437R. Professional Presentation. (2:10:20) Prerequisites: ArtDs. 237R, 337R.
Professional techniques and concepts of design presentation, including photographic documentation, audiovisual media, and portfolio refinement.

438R. Synthesis of Design 3. (1:2:0 ea.)
Environmental studies and design relationships.

440. Business Practices for Artists and Designers. (2:2:0) Prerequisites: advanced standing and consent of instructor.
Establishing an individual artistic or design business.

441R. Graphic Design 3. (3:1:5 ea.) Prerequisites: ArtDs. 341R, 342R.
Extending the individual's specific interests and needs, as applied to practical problems in the field of commercial art.

442R. Illustration 2. (2:1:3 ea.) Prerequisite: ArtDs. 342R.
Advanced studies in current illustration techniques, emphasizing development of individual style.

450R. Printmaking Studio. (3:1:5 ea.) Prerequisites: ArtDs. 350R, 351R; admission by portfolio.
Advanced work in relief, intaglio, serigraphy, or lithography.

456R. Sculpture Studio: Traditional Methods. (3:1:5 ea.) Prerequisites: ArtDs. 356R; admission by portfolio.
Advanced study and creative work in areas as listed under 356R. Sculpture students should choose and pursue only one area of interest per semester.

458R. Sculpture Studio: Construction-Fabrication. (3:1:5 ea.) Prerequisites: ArtDs. 358R; admission by portfolio.
Advanced study and creative work in areas as listed under 358R. Sculpture students should choose and pursue only one area of interest per semester.

459R. Ceramic Studio. (3:1:5 ea.) Prerequisites: an acceptable level of performance in ArtDs. 359R; admission by portfolio.
In-depth and exploratory experience with advanced methods of pottery making leading to professional preparation. Research emphasis on clay bodies, glazes, and the construction and operation of kilns.

461R. Crafts Studio. (3:1:5 ea.) Prerequisites: ArtDs. 361R; admission by portfolio.
Advanced exploratory problems in design, involving craft materials of various kinds.

462R. Crafts Studio: Metal and Jewelry. (3:2:4 ea.) Prerequisites: ArtDs. 361R; admission by portfolio.
Creative design in copper, silver, and other materials used in etching, enameling, forming, modeling, casting, etc.

494R. Special Problems in Art and Design. (1-3:2:2 ea.) Prerequisite: consent of instructor.
Individual study in area of special interest.

495R. Seminar in Art History. (1-3:Arr.:0 ea) (G-HA) Prerequisite: consent of instructor.
For students desiring further knowledge on a restrictive topic in a selected area of art history.

497R. BFA Final Project. (2:1:3 ea.) Prerequisite: consent of BFA adviser
Advanced individual project with minimum instructor guidance. Student must show a high degree of competence within his or her discipline.

499. Readings. (2:Arr.:Arr.)
Selections from the great literature about art.

500. Philosophy of the Fine Arts. (2:2:0) Recommended: Phil. 213 and any of the art appreciation classes, or Hum. 101.
Lecture and seminar for majors in fine arts.

518. Architectural Mural Media. (2:2:2) Prerequisites: ArtDs. 320R, 321R or 322R, 327R.
Historical backgrounds, studio work in design, and execution of murals.

578R. Art Education Studio. (1-3:1:5 ea.)
Curricula and projects in art education.

595R. Seminar. (1:0:2 ea.)
Student and faculty analysis of curricula relationships, projection of student objectives, contemporary topics, and visits to current exhibits.

600R. Individual Study in Art History. (2-8:Arr.:Arr. ea.) Prerequisites: ArtDs. 311, 312, 398.
In-depth study into any chosen historical art era.

601R. Ancient and Primitive Art. (1-8:Arr.:Arr.)

606R. Renaissance and Medieval Art. (1-8:Arr.:Arr.)

612R. Contemporary Art. (1-8:Arr.:Arr.)

618R. Advanced Architectural Mural Media. (2-8:Arr.:Arr. ea.)

620R. Advanced Design. (2-8:4:4 ea.) Prerequisite: ArtDs. 420R.

621R. Advanced Drawing. (2-8:8:8 ea.)

622R. Advanced Figure Drawing. (2-8:8:8 ea.) Prerequisite: ArtDs. 621R.

627R. Advanced Painting. (2-8:Arr.:Arr. ea.) Prerequisite: ArtDs. 427R.

633R. Advanced Watercolor. (2-8:Arr.:Arr. ea.) Prerequisite: ArtDs. 433R.

636R. Advanced Industrial Design. (2-8:Arr.:Arr. ea.) Prerequisite: ArtDs. 436R.

641R. Advanced Graphic Design. (2-8:Arr.:Arr. ea.) Prerequisite: ArtDs. 441R.

650R. Advanced Printmaking. (2-8:Arr.:Arr. ea.) Prerequisite: ArtDs. 450R.

656R. Advanced Sculpture. (2-8:Arr.:Arr. ea.) Prerequisite: ArtDs. 456R, 458R.

659R. Advanced Ceramics. (2-8:Arr.:Arr. ea.) Prerequisite: ArtDs. 459R.

661R. Advanced Crafts and Advanced Metal. (2-8:Arr.:Arr. ea.) Prerequisite: ArtDs. 461R.

677R. Survey of Recent Studies in Art Education. (2:2:0 ea.) Prerequisite: ArtDs. 461R.

679. Advanced Art and Crafts for Elementary Teachers. (2:2:1) Prerequisite: consent of instructor.

690. Color. (2:2:0)

697R. MFA Project for Master's Degree. (2-8:Arr.:Arr. ea.)

699R. Thesis for Master's Degree. (6-9:Arr.:Arr. ea.)

Asian Studies

See World Affairs, Asian Studies.

Biological and Agricultural Education

Coordinator: Allen (301 WIDB).

Courses

200. (BioAg.-Micro.-Zool) Principles of Biology. (3:3:0) (G-BS)
Introductory course for general education students.

398R. Biology Teaching Seminar. (1-2:0:0 ea.)
Students in an academic team assist instructor in design and/or implementation of a class.

Botany and Range Science

Professors: Andersen, Harper, Hess, Moore, Murdock, Stultz, Tidwell, Vallentine, Weber, Welsh.

Associate Professors: Flinders, Rushforth, Smith (Chairman, 401 WIDB), Whitton.
Assistant Professors: Brotherson, Wood.
Instructor: Liechty.
Research Associate Professor: Kent.
Adjunct Professors: Barker, Daines, Fischknecht, Holmgren, Nebeker, Plummer.
Adjunct Associate Professors: McArthur, Nelson, Sokolowski.
Adjunct Assistant Professors: Davis, Ferguson, Welsh.

The Department of Botany and Range Science offers undergraduate and graduate training in plant science and in range science. Three professional undergraduate curricula are offered: (1) one in botany; (2) one for prospective biology teachers; and (3) one in range science, with the option of specializing either in range resources, agribusiness, or wildland recreation. Students completing these programs are awarded the Bachelor of Science degree in botany or in range science. A two-year preforestry option is also offered.

Graduate training leading to the Master of Science and the Doctor of Philosophy degrees is available for those who qualify for admission to the Graduate School.

Botany
Undergraduate Program

The botany curriculum offers professional training which will qualify the student for a wide range of careers relating to the study, culture, and utilization of plant life. Students trained in botany find career opportunities in governmental services, in industry, in secondary schools, in colleges and universities, and in research institutions. They are employed as teachers, conservationists, geneticists, plant breeders, plant physiologists, mycologists, plant quarantine inspectors, taxonomists, museum curators, park naturalists, park rangers, and agriculturists.

The following degrees are offered in botany: Bachelor of Science, Master of Science, Master of Science—Biological Education, Master of Science—Botany-Genetics, Doctor of Philosophy—Botany, and Doctor of Philosophy—Botany-Genetics.

Required Courses for Botany Majors

Students may choose either a general or a preprofessional option within the botany major. The general option is intended for students seeking botanical-technician positions with federal agencies or with private industry. Students anticipating graduate work or dental or medical school should satisfy requirements for the preprofessional option. Required courses for the two options follow.

General Option
Bot. 201, 210, 321, 325, 332, 335 (or 331), 376, 440, 491R
Chem. 102, 103, 281
Math. 105 and 110
Range 350, 355

Preprofessional Option
Bot. 201, 210, 332 (or 335), 376, 419R, 440
Chem. 105 and 106 (or 111 and 112), 351 and 352 (or 252 and 481)
Math. 105 and 110; 109
Physics 201, 202
Range 350
Electives from the following list are recommended: AgHrt. 282; Micro. 321, 322; Chem. 223, 351, 353; Geog. 401; Geol. 101, 103; Math. 112, 113; Stat. 221, 501, Zool. 202, 203, 261, 331, 371; Bot. 205, 378, 400, 480.

Composite Teaching Major in Biology
Students majoring in botany who wish to certify as secondary school biology teachers may do so by completing the following required courses for the composite biology teaching major. No grade lower than C– will be accepted toward the fulfillment of these requirements.

Required Courses in Biology
(41 hours): Bot-Micro-Zool. 201; Micro. 321, 322; Bot. 105, 205, 350, 376, 440; Zool. 260 and 261 (or 460 and 461), 331, 344; Geol. 101, 102.

Recommended Courses in Biology:
Bot.-Zool. 250 or Bot. 400; Micro. 411; Bot. 321, 325.

Recommended Supporting Courses in Other Areas:
Math. 105*; Chem. 102*, 103, 281*, 284; Physics 100 or 105, 106, 107, 108; AgHrt. 102, 282.

*These courses are prerequisites for required biology courses.

Preforestry

See Preprofessional Programs, Forestry.

Botany Minor
The requirement for a minor in botany may be fulfilled with a minimum of 18 hours of credit in botany and/or genetics courses. Recommended courses are Bot. 101 or 105, 372; Bot. 276.

Graduate Program

Programs. Master of Science (M.S.), Doctor of Philosophy (Ph.D.).

Entrance Examination Required. (1) Graduate Record Exam (GRE), including the verbal and quantitative tests and the advanced examination in biological sciences; (2) an oral diagnostic examination on undergraduate work, normally given during the first month after registration as a graduate student.

Application Consideration Dates. Same as Graduate School deadlines.

Entry Times. Any regular registration.

Master of Science

Prerequisites. Students working toward a graduate degree in botany should have a basic understanding of general botany, cytology, anatomy, taxonomy, genetics, morphology, physiology, and ecology. They should also have training in mathematics, chemistry, physics, microbiology, soils, and zoology adequate for advanced study in areas of specialization. Where deficiencies exist, provision must be made for correcting them.

Fields. Biological science education, botany, genetics.

Minors Permissible. Any established minor in the sciences, Option 1 or 2.

Requirements. Minimum of 24 semester hours plus thesis (6-hr. min.). Consult graduate coordinator for modified requirements in biological science education.)

Required Courses. Graduate seminars during semesters in residence.

Doctor of Philosophy

Prerequisites. A master's degree in botany or the equivalent.

Fields. Botany, genetics.

Minors Permissible. Any established minor in the biological or physical sciences, or others by approval of the department.

Requirements. Course work approved by the student's graduate committee plus dissertation (18-hr. min). Compliance with University language and tool requirements.

Option 1. A major and minor field within the department plus a minor field outside the department. The number of hours in each will depend upon the background, interests, and competence of the student.

Option 2. A major field within the department with a program of supporting courses, plus a minor field outside the department. The number of hours in the major and minor fields will depend upon the background and competence of the student.

Required Courses. Graduate seminars, during semesters in residence.

Botany Courses

101. Plant Biology. (3:2:2) (G-BS)

Study of plants to illustrate life processes and structures.

105. Plant Kingdom. (3:2:2) (G-BS)

Morphology of representatives of the plant kingdom.

120. Plants and Civilization. (3:3:0)

Relationships of plants to human affairs.

201. (Bot.-Micro-Zool.) Introduction to Biology. (4:5:0) (G-BS) Prerequisites: Chem. 105 and concurrent registration in Chem. 106.

Basic principles of biology for majors and minors.

205. Field Botany. (3:2:4) (G-BS)

Common trees and shrubs and their uses.

210. Plant Classification. (3:2:3) (G-BS) Home Study also. Prerequisite: Bot. 101 or 201.

General principles of taxonomy and use of manuals, emphasizing classification of temperate flora.

220. Plant Science. (2:2:0)

Basic concepts of botany for science students.

250. (Bot.-Zool.) Environmental Biology. (3:3:0) Home Study also. (G-BS)

Ecological concepts and the environmental impact of man. For nonbiology majors.

276. (Bot.-Zool.) Heredity. (3:0:30) Home Study also. (G-BS) Prerequisites: Bot. 101 or 105 or BioAg. 200 or equivalent.

Principles of inheritance for nonscience majors.

321. Plant Anatomy. (3:1:5) (G-BS) Prerequisite. Bot. 101 or 201 or equivalent.

Structure of cells, tissues, and organs of vascular plants.

325. General Cytology. (3:3:0) (G-BS) Prerequisite: Bot. 101 or 201 or equivalent.

Organization and function of cells.

331. Nonvascular Green Plant Morphology. (3:2:3) (G-BS) Prerequisite: Bot. 101 or 201 or equivalent.

Structures, life histories, and relationships of algae and bryophytes.

332. Vascular Plant Morphology. (3:2:3) (G-BS) Prerequisite: Bot. 101, 105, or 201, or equivalent.

Structures, life histories, and relationships of vascular plants.

335. Mycology. (3:1:6) (G-BS) Prerequisite: Bot. 101 or 201.

Study of fungi.

370. Principles of Genetics 1. (2:2:0) (G-ML) Prerequisite: Bot. 201.

Basic concepts of genetics emphasizing the implications of sexual reproduction.

372. Evolutionary Genetics. (2:2:0) (G-ML) Prerequisite: Bot. 370.

Population genetics, particularly related to evolutionary forces which change gene frequencies.

376. Genetics. (3:3:0) Prerequisite: BioAg. 200 or equivalent.

Biological significance of sexual reproduction.

377. (Bot.-Zool.) Secondary Teaching Procedures in Biology. (3:3:1) Prerequisite: SecEd. 276.

378. (Bot.-Zool.) Genetics Laboratory. (1:0:3) Prerequisite: completion of, or concurrent registration in, Bot 370.

399R. Cooperative Education: Independent Study. (Arr.)

On-the-job experience.

400. Conservation of Natural Resources. (2:2:0) Home Study also. (G-BS)

Applying ecological principles in understanding, preserving, and enhancing natural resources. Field trip arranged.

440. Plant Physiology. (4:3:3) (G-BS) Prerequisites: Bot. 201 and college chemistry. Recommended: Chem. 281 or 351 and 352.

Photosynthesis, respiration, water relations, mineral nutrition, growth and development of flowering plants

453. Autecology. (3:2:3) (G-BS) Recommended: Bot. 440.

Relationships of plants to specific factors of the environment. Field trip arranged.

479. (Bot.-Zool.) Secondary Student Teaching. (4-8:0:20-40) Prerequisite: Bot. 377.

480. Plant Pathology. (3:2.3) Prerequisite: Bot. 105.

Important plant diseases—their identification, causes, and methods of control.

491R. Seminar. (1:1:0 ea.)

492R. Undergraduate Research Participation. (Arr.) Prerequisites: senior standing and consent of instructor.

Independent student research under faculty supervision.

498R. Special Problems. (1-3:0:3-9 ea)

501. Histological Technique. (2:0:6) Prerequisite: Bot. 101 or Zool. 105.

Preparing plant tissues for microscopic examination. Offered alternate years.

510 Advanced Taxonomy. (3:2:3) Prerequisites: Bot. 210 or consent of instructor.

One-three-day field trip arranged.

515. Agrostology: Taxonomy and Ecology of Grasses. (3:2:4) Prerequisite: Bot. 210.

521. Electron Microscopy. (2:2:0)

Theoretical and practical electron microscopy of biological material.

522. Biological Instrumentation. (4:2:6) Prerequisites. graduate status or permission of instructor.

Theory and application of research instruments to biological problems.

526. (Bot.-Zool.) Cell Biology. (4:3:3) Prerequisite: introductory course in biochemistry.

Molecular physiology and ultrastructure of cells, emphasizing eucaryotic organisms.

531. Electron Microscopy. (2:2:0)

Theoretical and practical electron microscopy of biological material.

532. Electron Microscopy Laboratory. (1:0:0) Prerequisites: consent of instructor and completion of or concurrent registration in Bot. 531.

Essentially individual instruction.

533. Algology. (3:2:3) Prerequisite. Bot. 331 or consent of instructor.

Detailed study of algae, including classification and morphology.

535. Advanced Mycology. (4:2:6) Prerequisite. Bot. 335 or equivalent.

Detailed study of taxonomy and morphology of special groups. Offered alternate years.

539. Paleobotany. (3.2:3) Prerequisites: Bot 101 or 105. Geol. 103.

540. Advanced Topics in Plant Physiology. (3:3:0) Prerequisite: Bot. 440 or consent of instructor.

541. Physiology of Fungi and Algae. (4:3:3) Prerequisite. Bot. 440 or consent of instructor

Physiological processes in spore germination, vegetative growth, and reproduction.

550. Plant Geography. (3:2:3)

Distribution of plant species and communities in the light of present and past climates. Offered alternate years.

551. Quantitative Ecology. (3:3:0) Prerequisites: Bot. 350 or 453, Stat. 221 or 501.
Methods of community analysis.

552. (Bot.-Range-Zool.) Terrestrial and Rangeland Ecosystems. (4:3:1) Prerequisites: Range 350, Stat. 221 or 501.
Biotic communities of the earth; population dynamics; reproductive, lifeform, and longevity patterns; species interactions; and structure, dynamics, and evolution of communities. Extended field trip.

555. (Bot.-Zool.) Aquatic Ecosystems. (3:2:3) Prerequisites: Bot. 350 or equivalent; Stat. 221 or 501.
Analysis of lake and stream ecosystems. Three Saturday field trips. One extended field trip.

573. Cytogenetics. (3:2:3) Prerequisites: genetics and cytology.
Offered alternate years.

574. Population Genetics. (3:3:0) Prerequisites: introductory course in genetics and consent of instructor.
Offered alternate years.

610. Botanical Terminology and Nomenclature. (2:2:0) Prerequisite: consent of instructor.
Botanical terminology, including the contributions of Latin and Greek words, their gender, number, and case. Offered alternate years.

630. Angiosperm Morphology. (4:3:3) Prerequisite: familiarity with taxonomy, anatomy, and physiology or biochemistry.
Offered alternate years.

650R. Advanced Topics in Plant Ecology. (2:2:0 ea.)
Current trends in ecological research and philosophy.

678. Organic Evolution. (3:3:0) Prerequisite: introductory course in genetics or consent of instructor.

691R. Graduate Seminar. (1:1:0 ea.)

698R. Special Problems. (1-3:0:3-9 ea.)

699R. Thesis for Master's Degree. (Arr.)

799R. Doctoral Dissertation. (Arr.)

Range Science Undergraduate Program

Three options are available to students who wish to work for a B.S. degree in range science. All options meet Civil Service requirements for the position of range conservationist. Type of employment wanted and personal preferences should be considered in selecting the option in range science to be followed:

A. **Range Resources Option**—designed for students desiring careers in Soil Conservation Service; federal land management agencies such as the Forest Service, Bureau of Sports Fisheries and Wildlife, Bureau of Land Management, or Bureau of Indian Affairs; or state departments of fish and game, lands, or natural resources.

B. **Agribusiness Option**—designed for students desiring careers in ranch management; banks and other financial institutions; chemical, feed, or seed companies, or livestock organizations; or as consultants, agricultural teachers, or Soil Conservation Service technicians.

C. **Wildland Recreation Option**—designed for students desiring careers dealing with recreational activities on wildlands. Land management agencies, both state and federal, provide a diversity of outdoor recreation activities that require employees trained in both wildland ecology and recreation.

Required Courses for Range Science Majors

Range Resources Option
Range 350, 355, 365, 462, 465, 466, 491R, 561
AgEcon. 112, 350R (or 325) or Range Sci. 520
AgHrt. 282, 303
AnSci. 207, 335 (or 340)
Bot. 101, 210, 376, 440, 469
Chem. 102, 103, 281**
Math. 105 and 110
Stat. 221
Zool. 457, 203, or 331 or 547

Agribusiness Option
Range 350, 365, 462, 466, 491R, 520, 561 (or 465)
Acctg. 201, 202
AgEcon. 112, 320, 325, 410 or 411
AgHrt. 282
AnSci. 207, 335 (or 340), 507
Bot. 101, 210, 376, 440
Chem. 102, 103, 281**
Math. 105 and 110
OrgB. 321
Stat. 221

Wildland Recreation Option
Range 350, 355, 365, 462, 465, 466, 491R, 561
AgEcon. 112, 350R
AgHrt. 282, 303
AnSci. 207
Archaeol. 103
Bot. 101, 205, 210, 376, 469
Chem. 102, 103
Math. 105 and 110
RecEd. 337, 410, 503
Sociol. 111, 205, or 300
Zool. 457

*Field experience approved by the department chairman may be substituted for Range 355.

**Alternate chemistry group: Chem. 105, 106, 252.

Students desiring employment as range researchers, extension agents or specialists, or college teachers in range science should consider working for advanced degrees after completing a B.S. degree in range science. Counsel should be sought from advisers in selecting electives that will be most helpful in preparing students for graduate work.

Range Science Minor
Required Courses (19 hours):
Range 365, 462, 466
AgHrt. 282
3 Hours from Range 465, 491R, 520, 561

Graduate Program

Programs. Master of Science (M.S.), Doctor of Philosophy (Ph.D.).

Entrance Examination Required. (1) Graduate Record Exam (GRE), including the verbal and quantitative tests and the advanced examination in biological sciences; (2) an oral diagnostic examination on undergraduate work, normally given during the first month after registration as a graduate student.

Application Consideration Dates. Same as Graduate School deadlines.

Entry Times. Any regular registration.

Master of Science

Prerequisites. Students working toward a graduate degree in range science should have a basic understanding of general botany, taxonomy, genetics, physiology, ecology, range management, range analysis, and animal nutrition and management. They should also have training in mathematics, chemistry, physics, microbiology, soils, and zoology adequate for advanced study in areas of specialization. Where deficiencies exist, provision must be made for correcting them.

Graduate students in the wildlife and range resources program will be identified with the department in which the major adviser holds an appointment. Graduate requirements established for the separate departments

(Botany and Range Science or Zoology) will be met. Candidates will not be expected to have completed or to subsequently complete a course schedule expected of undergraduate majors in these departments.

Fields. Wildlife and range resources, range science.

Minors Permissible. Any established minor in the sciences, Option 1 or 2.

Requirements. Minimum of 24 semester hours plus thesis (6-hr. min.).

Required Courses. Graduate seminars during semesters in residence.

Doctor of Philosophy

Prerequisites. A master's degree in botany, biology, biochemistry, ecology, range science, wildlife science, or zoology.

Field. Wildlife and range resources.

Minors Permissible. Any established minor in the biological or physical sciences, or others by approval of the departments.

Requirements. Course work approved by the student's graduate committee plus dissertation (18-hr. min.). Compliance with University language and tool requirements.

Required Courses. Graduate seminars, during semesters in residence.

Range Science Courses

161. Introduction to Forestry (3 3:0)
Forestry and its relationship to other wildland uses. (Field trip arranged.)

350. (Range-Zool.) Ecology. (3:3:0) Prerequisite: Bot. 201 or Zool. 114 or 201.
Basic principles, emphasizing range, forest, and wildland ecosystems.

355. (Range-Bot.) Field and Range Ecology. (2:1:3) (G-BS) Prerequisites: Bot. 210 and concurrent registration in Range 350.
Field techniques for inventory and analysis of natural and modified ecosystems. Extended field trip required

356. Ecology Laboratory. (1:0:0) Prerequisite: previous or concurrent enrollment in Range 350.

360. (Range-AnSci.) Livestock Range Management. (3:2:3) Recommended: AnSci. 207.
Practical training in managing native and seeded range for livestock and big game production.

365. Range Forage. (3:2:3) Prerequisite. Bot. 210.
Characteristics, distribution, and value of the more important forage plants of the western range.

462. Range Management. (3.2:3) Prerequisite: Range 365.
Management, grazing, and maintenance of rangelands.

465. Management of Habitat for Wildlife. (3:2:3) Prerequisites: Bot. 101 or equivalent, Range 365. Recommended Zool. 547.
Stresses habitat management and species interactions on rangelands and other wildlands.

466. Range Improvements. (3.2:3) Prerequisite. Range 365.
Plant control, seeding, fertilization, mechanical treatments, and livestock-handling facilities on rangelands

469. Forest Management. (3:3.0)
Managing forest properties. Field trips arranged.

491R. Range Seminar. (1:1:0 ea)
Professional development and the literature of range management.

492R. Undergraduate Research. (Arr. 0:Arr.)

498R. Special Problems. (1-3:0:3-9 ea.)
Selected range topics.

515. Agrostology: Taxonomy and Ecology of Grasses. (3:2.4) Prerequisite: Bot. 210.
Classification and ecology of grasses, emphasizing important forage species. Offered alternate years.

520. (Range-AgEcon-AnSci.) Management of Ranch Resources. (3.2:2) Prerequisites: senior or graduate standing and consent of instructor.
Commercial ranch case study. Management plan developed, consisting of maximum profit practices and enterprise combinations.

552. (Range-Bot.-Zool.) Terrestrial and Rangeland Ecosystems. (4:3:1) Prerequisites: Range 350, Stat. 221 or 501.
Biotic communities of the earth; population dynamics; reproductive, lifeform, and longevity patterns; species interactions; and structure, dynamics, and evolution of communities. Extended field trip.

561. Watershed Management. (3:2:3)
Water-producing characteristics of forest and rangelands, emphasizing laboratory and field studies of soil and vegetation.

691R. Graduate Seminar. (1:1:0 ea)

698R. Special Problems. (1-3:0:3-9 ea.)
Selected range topics.

699R. Thesis for Master's Degree. (Arr.)

799R. Doctoral Dissertation. (Arr.)

Business Education

Professors: Bell, Christensen, Stoddard, Waters.
Associate Professors: Boyer, Nelson (Chairman, 351 JKB), Perry, B. Petersen, Polson, G. Smith, H. Smith.
Assistant Professors: Ashby, Baker, Switzler.
Instructor: Howard.

Undergraduate Program

The Business Education Department provides, within the framework of the College of Business, the preparation needed by young men and women for responsible positions in business and professional business teaching. Three four-year major programs are available: (1) administrative office management; (2) administrative assistant; and (3) business teacher, with options to specialize in distributive education, office education, or sociobusiness education. In addition, two associate degree programs are offered: (1) data processing and (2) secretarial.

Department AACSB Core Requirements

In addition to comprehensive study in an area of specialization, the four-year programs provide opportunities for acquiring basic business skills and information defined by the American Assembly of Collegiate Schools of Business as the "common body of knowledge" needed by all business students. Courses that satisfy the departmental AACSB core requirements for each major are included with the major requirement listing; those courses to be taken during the freshman and sophomore years are marked with an asterisk.

A maximum of 6 hours of D credit will be accepted in courses used to fulfill AACSB plus departmental major requirements for a four-year diploma A maximum of 3 hours of D credit will be accepted toward fulfilling the two-year major requirements.

Division of Business Fundamentals

All students wishing a four-year major in business education register in the Division of Business Fundamentals until they have completed the following requirements: (1) lower-division departmental AACSB core courses (premajor requirements), indicated by an asterisk in major course requirement listings, with a minimum average grade point of 2.0; and (2) at least 62 hours of approved University credit.

Upon completion of these requirements, students may transfer to the major in which they intend to specialize and graduate.

Administrative Office Management Program

The administrative office management curriculum is designed for students interested in the fields of administrative services, office management, and office personnel management.

Preparation is provided for positions in middle management in the expanding profession of office administration. Training in organization, data processing systems and procedures analysis, communications, accounting, and supervision of personnel are emphasized. An opportunity for on-the-job training, coupled with classwork, may be included to provide a well-rounded program designed to meet employment requirements.

The requirements for the administrative office management majors are as follows:

Departmental AACSB Core

Math. 110A,B,C*	2
Acctg. 201* and 203*	6
Acctg. 232A*	1½
Acctg. 242	3
BusEd. 305	3
BusEd. 320R	5
BusEd. 480	2
BusMgt. 301	3
BusMgt. 341	3
BusMgt. 361	3
BusMgt. 499	3
ComSci. 133A*and 133B*	6
Econ. 110*, 300	6
OrgB. 321	3
Stat. 221*	3

*Premajor requirements

Administrative Office Management Requirements

BusEd. 485	1
Comms. 410	2

Plus 14 hours of elective business courses selected in consultation with and approved by the student's major adviser. Some recommended courses are:

Acctg. 301	3
Acctg. 302	3
Acctg. 312	3
Acctg. 356	3
Acctg. 412	3
Acctg. 455	3
BusEd. 370	3
BusEd. 399R	1-8
Comms. 102	2
Comms. 130	2
Comms. 301	2
Comms. 310	1
Comms. 330	3
ComSci. 233	3
OrgB. 421	3
OrgB. 425	3
Psych. 111	3
Psych. 330	3
Psych. 336	3

Executive Assistant Program

The executive assistant program is structured to prepare men and women for administrative secretarial positions with top business executives. The program provides a background in general education, business administration, and secretarial procedures so that the graduate can understand problems of top management and assist in providing resources helpful in solving these problems.

The requirements for the executive assistant are as follows:

Departmental AACSB Core

Math. 110A,B,C*	2-3
Acctg. 201*, 203*	6
Acctg. 242	3
BusEd. 305	3
BusEd. 320R	5
BusEd. 475	3
ComSci. 133A*, B*	3
Econ. 110*, 300	6
OrgB. 321	3
Stat. 221	3
BusMgt. 301	3
BusMgt. 341	3
BusMgt. 361	3
BusMgt. 499	3

*Premajor requirements

Executive Assistant Requirements

BusEd. 113* or equivalent	3
BusEd. 203* or equivalent	2
BusEd. 204*	2
BusEd. 311	3
BusEd. 370 or 275	3
BusEd. 485	1

*Premajor requirements

Business Teacher Program

The Department of Business Education cooperates with the College of Education in preparing students to teach business courses in secondary and postsecondary schools by offering a composite teaching major, with a specialization in one of the following areas: distributive education, office education, and socio-business.

Students selecting a business teacher composite major will complete the University general education requirements, 23 hours in professional education courses prescribed by the College of Education for secondary school certification, and 51 hours in College of Business or approved substitute courses. **Utah State Secondary School Certification requirements must be completed before the student is recommended for graduation.**

To quality for certification in business education, teachers must have completed either 2,000 hours of business-related work experience or 250 hours of supervised work internship. The internship is offered through BusEd. 399R.

Students should contact the Business Education Department early in the program to assure proper selection and sequencing of the required courses.

Requirements for all business teacher majors are as follows:

Teacher Major AACSB Core

Acctg. 201, 203	6
Acctg. 242	3
BusEd. 320R	3-5
BusMgt. 301 or Econ. 353	3
BusMgt. 241 or 341	3
BusMgt. 361	3
BusMgt. 499	3
ComSci. 133A	2
Econ. 110	3
Math. 110A,B,C	3
Stat. 221	3

*Premajor requirements

Professional Education Requirements (23 Hours)

SecEd. 276	4
SecEd. 376R	5
SecEd. 476	14
BusEd. 489	2

Students should register for SecEd. 276 during their sophomore year or early in their junior year, SecEd. 376R during their junior year, and SecEd. 476 during their final semester on campus. SecEd. 476 and BusEd. 489 must be taken concurrently. Refer to the Secondary Education section for these other course descriptions.

Business Education Requirements for Composite Teaching Major.

Each teaching major will select and complete one of the following optional composite teaching major programs. A minimum of 51 semester hours, including the teacher major departmental AACSB core courses listed above, is needed to fulfill business education requirements. The

Business Education Department will accept a maximum of 6 hours of D credit in courses used to meet this requirement.

Distributive Education

BusEd. 305	3
BusEd. 315	3
BusEd. 325	3
BusEd. 489	2
BusMgt. 256 or 356	3
Comms. 230	2

Plus 6 hours of electives.

Socio-Business Education

BusEd. 203	2
BusEd. 305	3
BusEd. 489	2
BusMgt. 200	3
Econ. 300	3
Econ. 301	3

Plus 6 hours of approved electives from accounting or economics.

Office Education

BusEd. 311 or equivalent	3
BusEd. 204 or equivalent	2
BusEd. 275	4
BusEd. 305	3
BusEd. 315	3
BusEd. 485	1
BusEd. 489	2
BusEd. 511 or 512	2

Associate Degree—Secretarial

The graduates of the two-year secretarial program are employed as private secretaries, executive secretaries, stenographers, and receptionists. They are highly skilled in shorthand, typewriting, office-record management, office-machines operation, and stenographic procedures. The program is designed for easy transfer to the four-year executive assistant or teacher education program. A total of 64 credit hours is required for graduation. Of this total, the student must have 35 hours in College of Business courses, 32 of which must carry a grade of C– or higher.

General Education Requirements
See the general education programs section of this catalog.

Major Field Requirements

Econ. 110	3
Acctg. 201, 203	6
BusEd. 101*	2
BusEd. 111*	4
BusEd. 112	3
BusEd. 113	3
BusEd. 203	2
BusEd. 204	2
BusEd. 275	4
BusEd. 305	3
BusEd. 311	3
BusEd. 320R, Units 1, 4, 5	3
BusEd. 485 or BusMgt. 380R	1
Elective	2

*If students have had typewriting and/or shorthand in high school, they need not take the beginning classes.

Associate Degree—Data Processing

The data processing program is designed to prepare a person to work in the business community as a unit-record equipment operator, as a computer operator, or as a programmer with special emphasis on programming for business applications. In addition, supervisory jobs are available at each of these levels. The program combines training in computer science with mathematics, accounting, and business education. The program is designed for easy transfer to a four-year administrative office management program. A total of 64 credit hours is required for graduation. The maximum D credit allowed in major field requirements is 3 semester hours.

General Education Requirements
See the general education programs section of this catalog.

Major Field Requirements

Acctg. 201	3
Acctg. 203	3
BusEd. 305	3
BusEd. 320R, Units 1, 2, 3, 4	4
BusEd. 485	1
ComSci. 120	2
ComSci. 122	2
ComSci. 133A, 133B	3
ComSci. 233	3
ComSci. 391R	1
Econ. 110	3
Math. 110	3
Stat. 221	3
Elective (Approved business courses)	4

Graduate Program

Programs. Master of Science (M.S.), Doctor of Philosophy (Ph.D.)

Entrance Examination Required. None for master's program; Graduate Record Examination and Miller Analogies Test for doctoral program.

Application Consideration Dates. Same as Graduate School deadlines.

Entry Times. Any regular registration.

Master of Science

Prerequisites. BusEd. 320 or equivalent. Background in statistics.

Field. Business education.

Minors Permissible. Any approved minor.

Requirements

Option 1: Minimum of 24 semester hours plus thesis (6-hr. min.).
Option 2: Minimum of 38 semester hours (no thesis).

Required Courses
Option 1: BusEd. 605, 625, and 3 hours of 515R.
Option 2: BusEd. 605, 625, 635, and 3 hours of 515R.

This program is designed to prepare business teachers for junior college and other postsecondary institutions and to improve instruction for secondary school business teachers.

Doctor of Philosophy

Prerequisites. Master's degree; one year of professional teaching experience; background work in mathematics, statistics, computer science, and College of Business common body of knowledge requirements.

Field. Business education.

Minors. None required.

Requirements. Acquisition of professional and academic competencies in teaching excellence, research, supervision and administration, and designated subject fields in business education. Tool Requirement 4 is required, comprised of the equivalent of Stat. 501 and 502, or 552, 554, and 502; ComSci. 133A, 133B, 231, and 233.

Required Courses. BusEd. 790R (doctoral seminars); BusEd. 799R (doctoral dissertation); additional course work as determined by advisory committee.

Courses

101. Beginning Typewriting. (2:3:2)
Mastery of the keyboard and development of basic skills Students with high school credit in typewriting should not register for this course.

111. Elementary Shorthand. (4:5:1) Home Study also. Prerequisite: BusEd. 101 or equivalent.
Fundamentals of shorthand theory, emphasizing fluency in reading and writing shorthand. Not recom-

mended for students with previous shorthand experience.

112. Intermediate Shorthand. (3:5:1) Prerequisite: BusEd. 111 or equivalent.
Development of accelerated shorthand writing and transcription competency. Enrolling students should be able to take dictation at a minimum of 60 words per minute and typewrite at 50 words per minute.

113. Advanced Shorthand. (3:5:1) Prerequisite: BusEd. 112 or equivalent.
Accelerated shorthand writing and rapid transcription of letters. Enrolling students should be able to take dictation at a minimum of 80 words per minute and typewrite at 50 words per minute.

120. Language Arts Typewriting. (3:5:Arr.) Prerequisite: typewriting speed of 35 words per minute.
Developing basic writing and critical reading skills through the medium of the typewriter.

203. Speedbuilding in Production Typewriting. (2:3:2) Home Study also. Prerequisite: BusEd. 101 or equivalent.
Intensive drills, emphasizing speed and control in the production of manuscripts, outlines, minutes, tabulations, letters, rough drafts, and legal instruments.

204. Advanced Production Techniques in Typewriting. (2:3:2) Prerequisite: BusEd. 203 or equivalent.
Application of advanced production techniques to practical business problems, including statistical reports, office projects, editing, and composition

275. Stenographic Procedures. (4:3:5) Home Study also. Prerequisite: BusEd. 113 and 204.
Comprehensive analysis of secretarial responsibilities accompanied by laboratory experiences. To be taken during the final semester by secretarial technician students.

☐ **Accounting 301, 302. Intermediate Accounting.** (3:3:0 ea.)

305. Principles and Methods for Analyzing Office Operations. (3:3:0) Home Study also.
Basic functions of administrative management, emphasizing motivation, techniques, personnel management, and administrative services.

311. Transcription. (3:3:3) Prerequisites BusEd. 113 or equivalent.
Accurate and rapid shorthand transcription, utilizing a variety of written communication skills. A minimum speed of 100 words per minute is required for entrance.

315. Cooperative Business Education and Coordination Techniques (3:3:0)
Philosophy, instructional methods, and coordination techniques in cooperative office and distributive education programs.

320R. Business Communication. (1-5:Arr.:0 ea.) Home Study also. Prerequisite: Category I Reading and Category I Writing.
Written and oral business communication, including case analysis and problem solving, and interpersonal and oral communication.

☐ **Organizational Behavior 321. Organizational Behavior and Administration.** (3:2:2)

325. The Distributive Education Curriculum. (3:3:0) Prerequisite: BusEd. 315.
Comprehensive overview of distributive education curriculum for high school, post-secondary, and adult levels.

☐ **Accounting 356. Accounting Information Systems.** (3:3:0)

370. Modern Office Machines. (3:3:3) Prerequisite: BusEd. 203.
Records management, reprographics, word processing, and basic data processing with modern office machines.

☐ **Business Management 380R. Executive Lectures.** (1:1:0 ea.)

399R. Cooperative Business Experience Internship. (1-8:0:5-40 ea.) Prerequisites: completion of major requirements and consent of internship director. Arrangements must be made the semester before enrollment.
On-the-job business experience.

475. Procedures for Executive Assistants. (3:3:2) Prerequisites: BusEd. 204, 311, 320R, 370, and AACSB core courses.
The culminating executive assistant course. Integration of previous preparation and intensive analysis of specialized administrative duties. Offered Winter Semester only.

480. Case Studies in Office Management. (2:2:1)
Extensive use of cases in administrative office management via student analysis, group discussions, and written reports.

485. Lectures on Office Administration. (1:1:0)
Prominent businessmen present lectures on pertinent office administration topics such as data processing, leadership, motivation, planning, and control. Offered Fall Semester only.

489. Senior Seminar for Business Teacher Majors. (2:2:0) Prerequisite: concurrent enrollment in BusEd. 476.
Analysis of the business teacher's role and responsibilities in the secondary school.

511. Seminar in Theory of Century 21 Shorthand. (2:2:0)
Introduction to theory, speedforms, and major distinguishing characteristics.

512. Seminar in Theory of Gregg Shorthand. (2:2:0)
Introduction to theory, brief forms, and major distinguishing characteristics.

515R. Methods of Instruction in Business Education. (3:Arr.:Arr. ea.)
Analysis of classroom methods, psychology of learning, and research findings pertaining to improved instruction in typewriting, shorthand, and distributive and cooperative education.

520. Methods of Instruction in Bookkeeping and Economics. (3:3:0)
Analysis of classroom methods, psychology of learning, and research findings pertaining to improved instruction.

530. Current Developments Influencing the Curriculum and Content of Business Education. (2:2:0)
Recent technological developments, such as automation in business, and an analysis of the content, materials, and procedures of business education.

589R. Workshop in Business Education. (1-2:0:1 ea.)
Series of informal, short-term workshops to meet needs of secondary school business teachers.

590R. Seminar in Business Education. (1-2:Arr.:Arr. ea.)
Intensive clinic emphasizing current thought and teaching methodology in one or more selected topics.

599R. Cooperative Business Experience Internship. (1-8:0:1-40 ea.) Prerequisites: completion of major requirements and consent of internship director.
On-the-job business experience.

605. Introduction to Research in Business Education. (3:3:0)
Research methods and analysis of methodology in existing research.

610. History and Philosophy of Business Education. (2:2:0)
Historical origins, major developments, and analysis of significant philosophical issues.

625. Tests and Measurements in Business Education. (3:3:0) Prerequisite: Stat. 221 or equivalent.
Classroom tests and instruments of evaluation and analysis of their uses and methods of construction.

635. Implications of Research for Improved Classroom Instruction. (3:3:0)

Analysis of recent research in business education.

670. Administration and Supervision in Business Education. (2:2:0)
Supervisory practices and analysis of administrative principles, emphasizing curriculum development, personnel management, and financial planning.

692. Research Projects. (1-4:Arr.:Arr.)

694. Independent Readings. (1-2:1-2:0)

699R. Thesis for Master's Degree. (6-9.Arr.:Arr. ea.)

790R. Doctoral Seminar. (Arr.)
Forum for interchanges among faculty and doctoral students to develop professional competencies prescribed by major department and advisory committee.

799R. Dissertation. (Arr.)

Business Management

Professors: Andrus, Call (Chairman, 395 JKB), Daines, Oaks, Stanford.
Associate Professors: Barnes, Clarke, Geurts, Giaugue, Hunt, Kelly, Lambert, Lee, McKinnon, Quackenbush (visiting), Schill, Wistisen.
Assistant Professors: Cox, Jackson, Nadauld, Smith.
Instructors: Longmore, Pearce.

Undergraduate Program

The primary objectives of the Business Management Department are (1) to prepare students for responsible leadership in their chosen professions; (2) to train, in depth, students interested in careers in marketing, production, finance, and retailing; and (3) to give students a broad understanding of individual and group behavior in industry.

Both the content and instructional methods of business management courses are designed to develop qualities in students which will help them realize their potential. Emphasis is placed on analytical skill and sound reasoning, insight and balanced judgment, understanding of human problems in organizations, proficiency in written and oral communication, and the rigor of learning on one's own initiative. The Department of Business Management also recognizes its responsibility to acquaint students with current research in the social sciences, techniques of decision making, new tools of quantitative analysis, and other applications of the management sciences. In addition, students are exposed to changing values and goals in today's society, the social responsibility of business leadership, the changing role of government in society and international trade, and the growth of multinational diversified corporations.

The following fields of concentration are administered by the Department of Business Management: general business, finance, marketing, operations and systems analysis, and retailing. After completing general education requirements and the college and departmental core requirements listed below, a student must elect one of the departmental concentrations.

An automatic composite minor in accounting and economics will have been earned by those students majoring in the department.

Business Management Department AACSB Core Requirements. To meet the requirements of the American Assembly of Collegiate Schools of Business, the Business Management Department requires students to take the following courses in their freshman and sophomore years:

Econ. 110
Math. 110
Stat. 221
Acctg. 201, 202
Acctg. 232A and 232B
ComSci. 133A

Before completing all these courses, a student registers in the Division of Business Fundamentals. After completion of the above courses with a GPA of 2.25 or a C in all seven courses the first time each is taken, students may then register as majors in the Business Management Department.

Please note that a student may not begin taking the junior level courses while still registered in Business Fundamentals except under extraordinary circumstances.

A maximum of 6 hours of D credit in College of Business courses will be allowed for graduation, no more than 3 hours of which may be in business management courses.

General Education. See the general education programs sections of this catalog for a detailed discussion of the University's general education program.

Business Management Department Requirements

Freshman and Sophomore	**Hours**
Math. 110	3
Acctg. 232A and 232B	3
Acctg. 201, 202	6
Econ. 110	3
Stat. 221	4
ComSci. 133A	2

Junior and Senior	**Hours**
Acctg. 242	3
OrgB. 321	3
Econ. 300, 301	6
BusMgt. 301	3
BusMgt. 341	3
BusMgt. 361	3
BusMgt. 499	3
Selected area of concentration (to be selected from one of the areas below)	15-16

General Business Concentration

This is an integrated multifunctional program designed for exceptional students. It is particularly adapted to the needs of students who intend to continue their study of business at the graduate level at a school other than BYU. A minimum overall grade-point average of 3.0 following completion of the junior year is required. Interested students should make written application to the department chairman at least four semesters before their planned date of graduation.

Students electing this concentration are required to take the following courses:

	Hours
BusMgt. 461	3
BusMgt. 401	3
BusMgt. 442	3
Electives (See Note on Senior Electives)	6

Finance Concentration

The course work offered in this area is designed, first, to familiarize business students with the elements of financial planning and, second, to provide specialized work for those who seek positions of management and executive responsibility in financial institutions or the financial departments of business firms. The requirements are flexible enough to allow some specialization toward commercial banking, investment banking, business finance, insurance, real estate, investment management, or financial counseling.

Students electing this concentration are required to take the following courses.

	Hours
BusMgt. 401	3
BusMgt. 405	3
BusMgt. 410	3
Electives (See Note on Senior Electives)	6

Marketing Concentration

The marketing concentration is designed to prepare students for executive responsibility in marketing, including retail management, product and brand management, industrial and marketing management, sales management, and various analytical staff functions such as sales forecasting and marketing research.

Students electing this concentration are required to take the following courses:

	Hours
BusMgt. 442	3
BusMgt. 459	3
Two of the following: BusMgt. 356, 431, 444, 450, 451, 453, 454, 455, 457, 458R	6
Electives (See Note on Senior Electives)	3

Operations and Systems Analysis Concentration

The course work offered in this area is designed for the business student whose interests lie in the operations area of the business enterprise and/or in the use of quantitative techniques to aid in the analysis of managerial problems. The requirements within the concentration are flexible enough to allow a special emphasis on operations management, computer science, or statistical analysis. Students could prepare for positions in operations management, systems analysis, operations research, quantitative systems, or industrial engineering. In addition, many of the courses offered in this area would provide an excellent support for those students interested in the increasingly important quantitative aspects of finance and marketing.

Students electing this option should plan their programs ahead because of the necessary prerequisites for some of the courses. Also, some courses may be offered only once a school year.

The following courses are required:

	Hours
BusMgt. 461	3
Two of the following	6
BusMgt. 463	
BusMgt. 468R	
Stat. 330	
Stat. 337	
ComSci. 451	
ComSci. 571	
Elective (See Note on Senior Electives)	6

The retailing concentration is designed to prepare students for positions in retailing management that include merchandising, financial control, sales promotion, personnel, store operations and electronic data processing. An internship in one of the major retail stores throughout the country is required. Students electing this concentration are required to take the following courses:

	Hours
BusMgt. 356	3
BusMgt. 442	3
BusMgt. 457	3
BusMgt. 599R	4
One of the following: BugMgt. 443, 44, 454, 455, 459	3

Supporting Field in International Business

Graduate students outside the College of Business who decide to obtain an understanding of international business without majoring in the department may take BusMgt. 430, Introduction to International Business. This course is a survey course designed to acquaint the student with micro and macro dimensions in international business. Those interested in a supporting field in international business may also take BusMgt. 431 and 432 upon approval of the instructor and the chairman of the Business Management Department.

Note on Senior Electives

Electives may be selected from any 400-level business management courses and, upon approval by the department chairman, from among certain relevant courses from other departments

Minor in Business Management

Students minoring in the Department of Business Management should complete the departmental AACSB requirements plus 12 hours of upper-division business management courses (excluding BusMgt. 380R).

Administrative Office Management Major

The administrative office management major is an option in the Business Education Department and is designed for students interested in the fields of administrative services, office management, and office personnel management.

Preparation is provided for positions in middle management in the expanding profession of office administration. Training in organization, data processing systems and procedures analysis, communications, accounting, and supervision of personnel are emphasized. An opportunity for on-the-job training, coupled with class work, may be included to provide a well-rounded program designed to meet employment requirements.

The requirements for the administrative office management major are found in the Business Education section of this catalog.

Graduate Program

Program. Master of Business Administration (MBA).

Courses

See Graduate School of Management, Courses for Master of Business Administration, for MBA courses.

200. Personal Finance. (2:2:0) Home Study also.

Practical course in money management and utilizing savings.

210. Introduction to Investments. (3:3:0)

Security markets, selection of stocks for a portfolio, and basic investment analysis. For nonmajors.

241. Introduction to Marketing. (3:3:0)

Principles, concepts, and problems concerned with the distribution of goods from producer to consumer; buyer behavior, product planning, pricing, and promotion.

256. Introduction to Retailing. (3:3:0)

Retail store operation, considering executive control, profit planning, merchandising, store location, layout, organization, policies, system, and coordination of store activities.

301. Financial Management. (3:3:0) Home Study also. Prerequisites: Acctg. 232A and 232B or calculus, Acctg. 202 or 302, ComSci. 133A, Stat. 221, and Econ. 110.

From the viewpoint of the business manager, emphasizing profitability, liquidity, and long-range financial planning.

341. Marketing Management. (3:3:0) Home Study also. Prerequisites: Acctg. 232A and 232B or calculus, Acctg. 202 or 302, ComSci. 133A, Stat. 221, and Econ. 110.

Emphasizes the understanding and use of basic concepts and tools of analysis for marketing decision making.

356. Retailing Management. (3:3:0) Prerequisites: BusMgt. 341.

Selection, location, and management of retail stores and systems, emphasizing profitability and integration of accounting, finance, and economic concepts and tools.

361. Operations Management. (3:3:0) Prerequisites: Acctg. 232A and 232B or calculus, Acctg. 202 or 302, ComSci. 133A, Stat. 221, and Econ. 110.

Management science techniques, emphasizing the operations function of a firm.

380R. Executive Lectures. (1:1:0 ea.)

Lectures by top executives on subjects significant to executive leadership.

401. Advanced Financial Management. (3:3:0) Prerequisites: BusMgt. 301, Econ. 300. Recommended: Econ. 301.

Capital budgeting, cost of capital, mergers and acquisitions, and current financial problems.

405. Management of Financial Institutions. (3:3:0) Prerequisites: BusMgt. 301, Econ. 301.
Management problems of commercial bank and nonbank financial institutions, emphasizing asset management, regulation, and the process of intermediation.

410. Investment. (3:3:0) Prerequisites: BusMgt. 301, Econ. 301.
Security market, portfolio management, taxes, estate planning, and security analysis.

411. Advanced Investments. (3:3:0) Prerequisites: BusMgt. 301, 410. Recommended: BusMgt. 401.
Current investment literature, Markowitz theory, random characteristics of stock market prices, investment, research, and security analysis.

430. Introduction to International Business. (3:3:0) Prerequisite: consent of instructor.
Complexities confronting U.S. firms and their management in international environments. Emphasizes functional and planning areas, including organization, market research, financial analysis, etc.

431. International Marketing. (3:3:0) Prerequisites: BusMgt. 301, 341, 361; OrgB. 321.
Analysis of selected international markets, institutions, and marketing management practices.

432. International Corporate Finance. (3:3:0) Prerequisites: BusMgt. 301, 341, 361; OrgB. 321.
Financial aspects of multinational corporations operating within an international environment; direct foreign investment, foreign exchange regulations, capital markets, etc.

439. International Management. (3:3:0)

442. Marketing Research. (3:3:0) Prerequisite: BusMgt. 341.
Uses and methods of marketing research. Major research project required.

444. Buying Behavior and Marketing Decisions. (3:3:0) Prerequisite: BusMgt. 341.
Analysis of markets and market segments as they influence marketing decisions.

450. Industrial Marketing and Procurement. (3:0:0) Prerequisites: BusMgt. 341 and completion of College of Business core.
Market selection, product planning and development, pricing, promotion, channels/sales management, buyer-seller relations, and contract negotiation.

451. Market Analysis and Forecasting. (3:3:0) Prerequisites: BusMgt. 442.
Techniques measuring demand for products and forecasting sales.

453. Product and Brand Management. (3:3:0) Prerequisite: BusMgt. 341.
Functional approach to the management of brands and products.

454. Sales and Distribution Management. (3:3:0) Prerequisites: BusMgt. 341 and 442.
Analysis of sales methods, organization, and management as they influence the field sales forces and institutions.

455. Promotion Management (3:3:0) Prerequisite: BusMgt. 341.
Strategies in promoting business and nonbusiness products, services, and institutions, including the role of promotion, target selection, media and copy decisions, and marketing research.

457. Seminar in Retailing. (3:3:0) Prerequisite: completion of or concurrent registration in BusMgt. 456.
Current problems and topics. Individual study possible in specific types of retail operations. Case studies, research projects, discussion groups, interviews with retailers.

458R. Seminar in Marketing Management. (3:3:0 ea.) Prerequisites: BusMgt. 341 and 442.
Topics selected from social issues, quantitative techniques and forecasting, personal selling, advertising management, and industrial marketing management.

459. Problems in Marketing Analysis. (3:3:0) Prerequisites: BusMgt. 301, 341, and 442.
Integration of finance, accounting, and economic concepts and techniques in marketing decisions.

461. Advanced Operations Analysis. (3:3:0) Prerequisite: BusMgt. 361.
Operations research/management science techniques as a managerial aid to decision making under certainty and uncertainty.

463. Advanced Operations Management. (3:3:0) Prerequisite: BusMgt. 361.
Cases, reading, research, and reports on current industrial practices and problems.

468R. Selected Topics in Operations and Systems Analysis. (3:3:0 ea.) Prerequisites: BusMgt. 361 and 461.

480. Risk Management. (3:3:0) Prerequisite: BusMgt. 301.
Risk in personal and business affairs, the different methods of meeting risks, insurance, and risk and public policy.

483. New Enterprise Management. (3:3:0) Prerequisites: BusMgt. 301, 341, 361, and OrgB. 321.
Concepts and skills of entrepreneurship. Application of functional tools to case situations.

487. Real Estate Administration. (4:3:0) Prerequisites: BusMgt. 301, Econ. 301.
Principles of property investments: determination of value, financing arrangements, and marketing and management problems.

488. The Social and Cultural Environment of Business Enterprise. (3:3:0) Prerequisite: senior standing in the department.
Influence of historical, cultural, psychological, and social forces on business behavior.

490R. Topics in Business Management. (3:3:0 ea.) Prerequisite: completion of business fundamentals and College of Business core courses.

491. Research and Diagnosis of Business Problems. (1-2:Arr.:Arr)

499. Business Policy. (3:3:0) Prerequisites: BusMgt. 301, 341. Recommended: Econ. 300 and OrgB. 321.
Determining long-range objectives in the business firm, and developing sound and consistent policies to achieve these objectives. Should be taken during last semester before graduation.

599R. Skaggs Internship of Retail Management. (4:Arr.:Arr. ea.) Prerequisite: consent of director.

Career Education

Professors: Flandro, Reid.
Associate Professors: Goodson, L. E. Johnson, E. R. Peterson (Chairman, 135-A BRMB), Sorenson.
Assistant Professors: Andersen, D. Jensen, Nalder.

Career education is a lifelong process of personal and career exploration and development. This process involves continuous decision making based on personal evaluations of goals, values, and opportunities. It is particularly important to students preparing for their entry occupation and future life-style to receive effective information and guidance during the exploratory and planning process. Such timely assistance can enhance the efficiency and appropriateness of a student's academic and life preparation.

The Career Education Program provides classes designed to help students apply life-planning and decision-making skills to the choice of a major and or career field and develop skills needed to enter and succeed in the world of work. It also provides workshops in life planning, career exploration, and interpersonal career communications, as well as a corps of counselors to help students explore educational and occupational fields and to select a major best suited to these opportunities.

The Career Information Center, 135 BRMB, contains detailed, current information about numerous occupations, college majors, educational programs, professional licensing requirements for various states, placement information about recent BYU graduates, and career skills information, such as job interviewing.

Courses

115. Life Planning and Decision Making. (2:2:0) Home Study also. (G-ML)

Experiential class which considers self-awareness, creative thinking, and decision making as releted to life and career decisions.

116. Career Exploration. (1:1:0)

Experiential class applying vocational choice processes and decision-making skills to choice of a major and/or occupational field.

317. Career Skills. (1:0:1)

Developmental class designed to assist all undergraduates to prepare for, obtain, and maintain optimum employment.

399R. Cooperative Education. (3:0:0) Prerequisites: junior standing and consent of sequence coordinator. Project approval required prior to registration.

On-the-job experience for students whose departments do not offer cooperative education.

Chemical Engineering

Distinguished Professor: Hall.

Professors: Barker (Chairman, 350 CB), Christensen, Coates, Hanks, Horton, Pope, Smoot, Wilson.

Associate Professors: Bartholomew, Beckstead, Glassett, Hedman.

Assistant Professors: Oscarson, Solen.

Undergraduate Program

The Department of Chemical Engineering offers professional training leading to the degrees of Bachelor of Science (B.S.), Master of Science (M.S.), Master of Engineering (M.E.), and Doctor of Philosophy (Ph.D.). The curriculum is accredited by the Engineers' Council for Professional Development and the American Institute of Chemical Engineers. The department also provides training leading to the two-year Associate of Science degree as a chemical-engineering technician.

Professional chemical engineers find employment in a wide range of fields from environmental control to rocket propellant manufacture. Their principal activity is to change raw materials into useful and valuable products by applying a basic knowledge of chemistry, physics, mathematics, and economics. Using this knowledge, they conduct research on processes; market products; and design, build, operate, and manage complex manufacturing plants.

All chemical engineering students take basic courses in chemistry, mathematics, physics, and chemical engineering. The course of study leading to the B.S. degree is designed to allow the student to choose from 14 to 19 semester hours in one of several options. The courses recommended for each option are listed below. These options are designed to give increased training in a student's specific field of interest. Successful completion of these courses will qualify graduates for work in any of the many fields that employ chemical engineers, such as those within the chemical industry and those related to the study of atomic energy, petroleum, air and water pollution, and space, or they will qualify them to pursue further studies leading to an advanced degree.

Chemical engineering technicians are an important part of the chemical-process industries. They find employment in all the industries listed in the above general description of the chemical engineering profession. They form part of the team and are individually responsible for such things as obtaining and analyzing data, operating equipment, and planning and carrying out experiments. The technician must be able to perform tests, solve mathematical and chemical formulas, assemble and work with intricate laboratory equipment, make accurate measurements and computations, and supervise the work of others. The following training suggestions will give the technician the tools to carry out this necessary and meaningful work. The technician student may be involved in research programs in the department or, with prior approval, may be employed in industry in a cooperative program to satisfy this requirement.

Entrance Requirements

Entrance requirements are similar for all branches of engineering at BYU and are specified in detail in the section of this catalog devoted to a description of the College of Engineering Sciences and Technology.

Transfer Students

Provisions have been made so that a qualified student transferring from a junior college or from other universities, colleges, or departments can complete the B.S. degree requirements in two years. The qualifications and suggested course sequence are subsequently listed. Prospective transfer students should contact the department at the earliest date possible so that any variations can be accommodated with minimum loss of time to the student.

Grade Requirements

In order to continue in the Chemical Engineering Department, a student must maintain a cumulative grade-point average of 2.0 or higher in each of the following subjects: mathematics, chemistry, and physics. Students not maintaining this average will be placed on probationary status in the department.

In order to graduate, students must maintain an overall average of at least 2.0. When students receive a second D in a chemical engineering class, they are put on department probation and must then repeat either class and obtain a C or better before taking any other chemical engineering classes. If they should receive a third D in this or any future chemical engineering class, they are put on a year's probation, during which time they cannot take any chemical engineering class. Thereafter, if they receive another D, they are dropped from the program.

General Education Requirements

Engineering students are subject to either the new or the former general education program requirements. Complete information is available in the general education programs sections of this catalog.

Students should understand that general education requirements (including religion) are in addition to the course requirements shown in the typical program.

Chemical Engineer Course Requirements

Students may register for 18 hours per semester, exclusive of physical education, without obtaining special permission. The courses required for the B.S. degree in chemical engineering are summarized in the following tables. It is expected that the student will complete the course work in three calendar years. Provision is made for a four-year program and this is also shown below. Freshmen, sophomores, and juniors majoring in chemical engineering are required to register for ChemEng. 291R during each semester of full-time registration.

Students completing missions and returning to the Chemical Engineering Department will be given special help in arranging their schedules. They should contact the department to make suitable arrangements.

Suggested Sequence of Courses (B.S. Degree), Three-Year Program

First Year	**F**	**W**	**Sp**	**Su**
ChemEng. 100, 101, 273	1½	1½	3	
ChemEng. 291R	0	0		
Chem. 111, 112, 226	3	6		
Econ. 110 or 212	3			
Math. 112, 113***	4	4		

Second Year	**F**	**W**	**Sp**	**Su**
ChemEng. 291R	0	0		
ChemEng. 374, 376	3	3		
ChemEng. 373		3		
ChemEng. 475			2	
Chem. 351, 352, 353			3	4
Chem. 461, 462, 464	3	5		
Math. 214, 321	3	3		
Physics 121, 122	3	3		
Option electives*	3		3	

Third Year	**F**	**W**	**Sp**
ChemEng. 378		3	
ChemEng. 464		2	
ChemEng. 476	3		
ChemEng. 477		2	
ChemEng. 478	3		
ChemEng. 491R	½	½	
ChemEng. 550		2	
CivEng. 201	2		
ElecEng. 301		2	
Option electives*	2-3	3	3

Suggested Sequence of Courses (B.S. Degree), Four-Year Program

Freshman	**F**	**W**
ChemEng. 100, 101	1½	1½
ChemEng. 291R	0	0
Chem. 111, 112, 226****	3	6
Econ. 110 or 212		3
Math. 112, 113***	4	4

Sophomore	**F**	**W**
ChemEng. 291R	0	0
ChemEng. 273, 378	3	3
Chem. 351, 352, 353	3	4
Math. 214, 321	3	3
Physics 121, 122	3	3

Junior	**F**	**W**
ChemEng. 291R	0	0
ChemEng. 373		3
ChemEng. 374, 376	3	3
Chem. 461, 462, 464	3	5
ElecEng. 301		2
Option electives*	3	3

Senior	**F**	**W**
ChemEng. 464		2
ChemEng. 475	2	
ChemEng. 550		2
ChemEng. 476	3	
ChemEng. 477		2
ChemEng. 478	3	
ChemEng. 491R	½	½
CivEng. 201		2
Option electives*	3	5-6

Transfer Student (Jr. Level)**	**F**	**W**
ChemEng. 100	1½	
ChemEng. 101	1½	
ChemEng 291R	0	0
ChemEng. 273, 378	3	3
ChemEng. 374, 376	3	3
ChemEng 373		3
ElecEng. 301		2
Option electives	3	

Second Year

Same as senior year in four-year program.

*Option electives to be selected from one of the following options. Options may be designed by the student with adviser and departmental approval **in advance.**

**Transfer students should have completed calculus, differential equations, inorganic and organic chemistry, and physics (see the general education programs sections of this catalog for general education requirements). Transferring students who have had a course in FORTRAN programming are excused from ChemEng. 101. An additional 3 hours of option electives will be required in the senior year if suitable transfer classes are not available.

***Math. 110 and DesTech. 111 are presumed to be prerequisites for the freshman year. Students may be exempted from these classes if they have completed equivalent high school courses and have passed a placement exam given prior to registration.

****Chem. 105, 106, 223 may be substituted for Chem. 111, 112, 226 depending upon student's high school chemistry background.

Options

The curriculum outlined above leading to the B.S. degree in chemical engineering provides for 14-19 semester hours of technical electives. The set of courses taken by the student to fill the technical-elective requirements is referred to as a "technical option." To meet accreditation requirements and provide for maximum flexibility in student course selection, the department has outlined a series of options, any of which can be selected by the student to satisfy the technical-electives requirements. Students may also design their own technical option subject to approval in advance by their adviser and the department. Minimum requirements for a technical option are as follows:

1. The set of courses should be an integrated program that achieves some objective such as additional training in a specific area.
2. The set of courses must include at least 3 semester hours of engineering theory and 3 semester hours of engineering application.
3. The set of courses must include at least 2 semester hours of mathematics or statistics beyond Math. 321.
4. The courses selected should be upper-division technical courses (i.e., engineering science, math, or business).

It should be emphasized that all students receive their primary training as chemical engineers. The technical-option classes allow a student to study in a specific area of personal interest in which chemical engineers find employment.

Students may select one of the following options to fit their individual needs and interests. All of the option elective courses shown in the recommended sequence of courses previously outlined must be taken from one option only. The sequence of option courses may be interchanged with general education requirements. Any variation within the option selected must be approved by the student's adviser and the department.

Students may design their own sequence of option courses from such areas as chemistry, physics, mathematics, food processing, medicine, etc. This allows the student maximum flexibility. Courses should be chosen to give a sound technical background and in all cases must be approved by the department before undertaking the courses.

Energy and Environment Option

Chemical engineering provides an ideal background for students interested in technical energy and environmental problems such as coal gasification, shale oil recovery, and pollution control. The student should complete 18 hours from the following courses:

Required Courses (11 hours)
ChemEng. 510, 520
CivEng. 550 (3) Water Quality Management
Stat. 332 (2) Statistical Methods

Elective Courses* (7-8 hours)
ChemEng. 493R (1), 551, 677, 681
CivEng. 451 (3) Sanitary Engineering
Bot.-Zool. 250 (3) Environmental Biology
Geol. 104 (3) Environmental Geology
Micro. 311 (2) Sanitation and Public Health
Micro. 381 (2) Water and Sewage Microbiology

*Of the optional courses at least 4 hours of biology and/or microbiology are needed to fulfill biology requirements of the Former General Education Program.

Nuclear Option

Production of power in the future will depend heavily on nuclear reactors. Many chemical engineers are now working in this field of endeavor. Completion of the following 16 hours will train the student for more effective and immediate value to this growing field.

Required Courses (16 hours)
ChemEng. 582, 583
Math. 323 (3) Applied Partial Differential Equations
Physics 222 (3) Principles of Physics
Physics 555 (3) Nuclear Reactor Physics
Physics 557 (1) Nuclear Reactor Physics Laboratory

Plant Design and Operations Option

Chemical engineers who wish to emphasize the design and operation of a chemical plant should complete the option that follows. This option brings together the economics and design principles of chemical engineering.

Required Courses (9 hours)
ChemEng. 520, 551, 683*, or 510
Stat. 332 (2) Statistical Methods Used in Engineering
Elective Courses (4-5 hours)
ChemEng. 493R (1), 498R**, 510, 677
ElecEng. 302 (2) Elements of Electrical Engineering
MechEng. 531 (3) Principles of Automatic Control
MechEng. 541 (3) Advanced Heat Transfer

*This course is ordinarily taken during the Spring Term following ChemEng. 464.
**ChemEng. 498R must be coordinated with ChemEng. 683 to provide opportunity for detailed design and economic evaluation of a pilot plant for some process of the student's choosing.

Management Option

A large number of chemical engineers are employed as managers in the chemical industry. Students wishing to acquire increased management skills should complete 15 hours as listed:

Required Courses (9 hours)
ChemEng. 510, 551, 683**
Stat. 332 (2) Statistical Methods in Engineering
Elective Courses (6 hours)
Acctg. 201 (3) Elementary Accounting
BusMgt. 301 (3) Financial Management
BusMgt. 341* (3) Marketing Management
BusMgt. 361* (3) Operations Management
BusMgt. 485R (3) Seminar in Marketing Management
ChemEng. 493R (1) Special Topics—Undergraduate

*Requires Acctg. 201 or instructor's permission.
**This course is ordinarily taken during the Spring Term following ChemEng. 464.

Bioengineering and Premedicine Option

The courses listed under this option will prepare the student for employment in the food or pharmaceutical industries, for research and development of artificial organs, or for study in the field of medicine (see also the Preprofessional Programs section of this catalog). The 17-18 hours of course work satisfy the department elective requirements

Required Courses (7 hours)
ChemEng. 520, 551
Stat. 332* (2) Statistical Methods in Engineering
Elective Courses* (10-11 hours)
Chem. 481 (4) Biochemistry
Chem. 484 (2) Biochemistry Laboratory
Micro. 331 (5) Microbiology
Micro. 381 (2) Water and Sewage Microbiology
Micro. 451 (3) Bacterial Physiology
Micro. 521 (2) Industrial Microbiology
Micro. 522 (1) Industrial Microbiology Laboratory

*Math 411 can be taken in place of Stat. 332.
**Students must select these courses to satisfy biological science requirement (4 hours) of the Former General Education Program.

Research and Development Option

This option prepares the student for entry into graduate school and/or for employment in the field of industrial research and development.

Required Courses (12 hours)
ChemEng. 499, 673, 681
Math. 323 (3) Applied Partial Differential Equations
Elective Courses (2 Hours)
ChemEng. 493R (1), 510, 520, 551
MechEng. 512 (3) Boundary Layer Theory
MechEng. 541 (3) Advanced Heat Transfer
Chem. 561 (3) Chemical Thermodynamics
Math. 411 (3) Numerical Methods

Aerospace Option

The aerospace industry provides a wide variety of opportunities ideally suited to chemical engineers. Problems in propulsion, combustion, fluid mechanics, and flight mechanics are typical of the challenges this field offers. Chemical engineering students wishing to specialize in aerospace engineering should complete 14 hours from the following courses.

Required Courses (9 hours)
ChemEng. 673 (3) Transport Phenomena
MechEng. 511 (3) Intermediate Gas Dynamics
Math. 323** (3) Applied Partial Differential Equations
Elective Courses* (5 hours)
ChemEng. 493R (1), 510, 520
MechEng. 512 (3) Boundary Layer Theory
MechEng. 541 (3) Advanced Heat Transfer
MechEng. 542 (3) Design of Heat-Transfer Systems
Math. 315 (3) Methods of Advanced Calculus
Math. 322 (3) Topics in Applied Mathematics
Physics 527, 528 (3 ea.) Introduction to Astrophysics
Physics 536, 537 (3 ea.) Space and Planetary Physics

*Must include at least 3 hours of engineering.
**Math. 411 can be taken in place of Math. 323.

Applied Mathematics/Statistics Option

The ability to analyze, evaluate, and solve complex problems using modern mathematical/computational tools is an invaluable asset to the chemical engineer. This option provides the student with an opportunity to increase his or her ability to use mathematics and/or statistics as a working, problem-solving tool beyond the minimum required level.

Required Courses (8 hours)
ChemEng. 551, 673
Math. 323 (3) Applied Partial Differential Equations
Elective Courses (5-6 hours)
ChemEng. 493R (1) Special Topics—Undergraduate
ComSci. 300 (3) Programming Systems Survey
ComSci. 451 (3) Information Systems Analysis
Math. 322 (3) Topics in Applied Mathematics
Math. 411 (3) Numerical Methods
Stat. 332 (2) Statistical Methods Used in Engineering
Stat. 432 (3) Quality Control and Industrial Statistics
Stat. 520 (3) Theory of Statistics 1

Industrial Option

This option gives the student training related to industrial engineering and operations management. The student must complete 13-15 hours as listed:

Required Courses (6 hours)
ChemEng. 551, 683**
Stat. 332 (2) Statistical Methods in Engineering

Elective Courses* (7-9 hours)
- ChemEng. 493R (1), 510, 520, 677
- BusMgt. 461 (3) Advanced Operations Analysis in Business Management
- BusMgt. 463 (3) Advanced Operations Management

*Students must take two of the business classes.
**This course is normally taken during the Spring Term following ChemEng. 464.

Chemical Engineering Technician Course Requirements
The courses required for the Associate of Science (A.S.) degree as a chemical engineering technician follow. This course sequence can be completed in a two-year period.

First Year	**F**	**W**	**Sp**
ChemEng. 100, 101	1½	1½	
ChemEng. 273			3
ChemEng. 291R	0	0	
Chem. 105, 106	4	4	
Math. 121, 122	3	3	
Physics 105, 106, 107, 108	4	4	

Second Year	**F**	**W**
ChemEng. 291R	0	0
ChemEng. 498R or Co-op		2
Chem. 223	5	
ComSci. 130		3
DesTech. 111	2	
Engl. 316		3
Math. 223	3	
MfgTech. 335 or laboratory elective 3-4		

Students completing requirements for the A.S. degree may complete a B.S. degree in chemical engineering with 84 additional semester hours if they have satisfactory academic standings. The required courses are available in the department, and course outlines will be worked out individually.

Work Required to Obtain a B.S. Degree after an A.S. Degree in Chemical Engineering

Biology	4
Chemical Engineering	26
Chem. 351, 352, 353, 461, 462, 464	15
Math. 113, 214, 321	10
Engineering electives	4

Integrated Master's Program

At the end of the sophomore year or during the junior year of the chemical engineering curriculum, a student who desires to obtain a master's degree in chemical engineering (either M.E. or M.S.) may elect to enter the integrated master's program. The purpose of this program is to afford students greater flexibility in scheduling their course work than is normally available through the traditional B.S. degree followed by M.E./M.S. degree program. In this program the student may work toward both the bachelor's and master's degrees simultaneously and receive both simultaneously upon graduation at the end of the program (normally five years from freshman matriculation). At the end of the sophomore year the student must have a cumulative GPA of 2.70 or more. All credit to be counted toward the master's degree must carry a cumulative GPA of 3.00 or better.

Prior to completion of the final 30 hours of course work, the student will submit a formal application for admission to the Graduate School. At this time the student must obtain certification from the undergraduate dean's office that there are only 30 hours remaining to be completed for this program. Upon certification the student will register in the Graduate School.

Prior to completion of the final 15 hours of course work, students must file with the Graduate School a final study list which specifically identifies all technical elective courses and which bears the signatures of their advisory committee. The form for this may be obtained from the department secretary.

Interested students should contact the department graduate coordinator for procedures, application forms, and other details.

Graduate Program

Programs. Master of Engineering (M.E.), Master of Science (M.S.), and Doctor of Philosophy (Ph.D.).

Entrance Examinations Required. U.S. citizens: none. Foreign nationals: Graduate Record Examination (verbal, aptitude, and advanced engineering). At the department's discretion, a special entrance screening examination may be required.

Application Consideration Dates. U.S. citizens: same as Graduate School schedule. Foreign nationals: April 30 each year.

Entry Times. Same as Graduate School schedule except for foreign nationals (master's level): Fall Semester only.

Master of Engineering

This degree is designed to provide advanced engineering training at the master's level with emphasis on management, design, and synthesis. This is partly accomplished by choice of courses and partly by the special project (3 hrs., 698R). Because no research project or thesis is required, the student does not receive special training for research work. Students desiring such training should consider the M.S. or Ph.D. programs.

Prerequisites. B.S. degree (or equivalent) in chemical engineering from an AIChE-accredited school. B.S. degree in other engineering, chemistry, physics, materials science, or metallurgy is acceptable for provisional admission. Consult departmental brochure for further details.

Fields. Combustion, environmental control, fluid mechanics, nuclear engineering, process engineering, thermodynamics.

Requirements. Minimum of 30 semester hours including special project (3 hr. min.—698R).

Required Courses. ChemEng. 673 (3), 675 (3), 677 (1), 681 (3), 691R (1 each semester), 698R (3 min.), Options/Minor (16-18). For requirements for the Option/Minor special programs, see departmental brochure.

Master of Science

Prerequisites. B.S. degree (or equivalent) in chemical engineering from an AIChE-accredited school. B.S. degree in other engineering, chemistry, or physics is acceptable for provisional admission. Consult departmental brochure for further details.

Fields. Combustion, environmental control, fluid mechanics, nuclear engineering, thermodynamics.

Requirements. Minimum of 24 semester hours plus thesis (6-hr. min.—699R).

Required Courses. ChemEng. 673 (3), 675 (3), 677 (1), 681 (3), 691R (1 each semester). For requirements of special programs, see departmental brochure.

Doctor of Philosophy

This program is administered by an interdepartmental committee. For further details see the College of Engineering Sciences and Technology section of this catalog.

Courses

100. Introduction to Chemical Engineering 1. (1½:1:1)
The chemical engineering profession, process synthesis concepts, field trips to selected industries, and problem solving.

101. Introduction to Chemical Engineering 2. (1½:1:1)
Machine computation and use of computers to solve engineering problems, FORTRAN programming, and numerical methods of problem solving.

110. Energy and Society. (1-3:1-3:0)
History and future of traditional energy sources. Development and technology of new energy sources.

273. Chemical Process Principles. (3:3:0) Prerequisites: ChemEng. 101; Chem. 106 or 112; concurrent registration in Physics 121.
Material and energy balances.

291R. Undergraduate Seminar. (0:½:0 ea.)
Department discussions, interchange with faculty, professional activities. Required each semester for freshman, sophomore, and junior majors.

373. Chemical Engineering Thermodynamics 1. (3:3:0) Prerequisites: Chem. 416; concurrent registration in ChemEng. 273.
First and second laws of thermodynamics, applied to the behavior of real fluids. Physical and chemical equilibrium.

374. Unit Operations 1. (3:3:0) Prerequisites: ChemEng. 273; Math. 321.
Fluid mechanics, including process flow, hydraulic equipment, solids handling, and size reduction.

376. Unit Operations 2. (3:3:0) Prerequisite: ChemEng. 374.
Heat and mass transfer, including conduction, convection, radiation, diffusion; steady and unsteady state; transport analogies; design application.

378. Science of Engineering Materials. (3:3:0) Prerequisite: Chem. 106 or 112.
Principles and properties of materials and their behavior, applied to engineering.

399R. Cooperative Education: Chemical Engineering. (1-3:0:0 ea.) Prerequisites: consent of department and college coordinators. Students must meet departmental requirements and consult adviser prior to enrollment.
On-the-job training experience. Report required. Six hours maximum allowed.

464. Chemical Engineering Plant Design and Economics (2:2:0) Prerequisite: ChemEng. 476.
Design of chemical engineering machinery; plants and/or processes requiring the application of unit operations; chemical process principles; economic analysis.

474. Chemical Engineering Thermodynamics 2. (2:2:0) Prerequisites: ChemEng. 373; concurrent registration in Chem. 462.
Continuation of ChemEng. 373.

475. Unit Operations Laboratory 1. (2:0:6) Prerequisite: ChemEng. 376.
Experimental verification of unit operations design principles, data collection and reduction, and report preparation.

476. Unit Operations 3. (3:3:0) Prerequisite: ChemEng. 376.
Stage operations, distillation, extraction, and absorption; design applications.

477. Unit Operations Laboratory 2. (2:0:6) Prerequisite: ChemEng. 476.
Experimental verification of unit operations design principles, data collection and reduction, and report preparation.

478. Chemical Engineering Kinetics. (3:3:0) Prerequisite: Chem. 462.
Theories and applications of chemical kinetics in catalytic and noncatalytic reacting systems.

491R. Seminar. (½:1:0 ea.)
Technical presentations by students, faculty, and guests. Required of all majors in the senior year.

493R. Special Topics—Undergraduate. (1-3:1-3:Arr. ea.) Prerequisite: consent of instructor.

498R. Special Problems—Undergraduate. (1-3:Arr.:Arr. ea.) Prerequisite: consent of instructor.

499R. Undergraduate Thesis Research. (1-3:Arr.:Arr. ea.)

510. Energy and Fossil Fuels. (3:3:0) Prerequisite: concurrent registration in ChemEng. 464 or consent of instructor.
Energy sources and demands; energy processes, costs, and relation to environment; design applications and case studies, emphasizing coal gasification and shale oil recovery.

520. Air Pollution Control. (3:3:0) Prerequisite: consent of instructor.
Causes and effects of air pollution; standards, criteria, and legislation; dispersion, meterology, and atmospheric chemistry. Includes design project and use of impact statements.

550. Process Synthesis. (2:2:0) Prerequisite: previous or concurrent registration in ChemEng. 464.
Synthesis of chemical processes from process components including optimization and economic factors. Case study.

551. Process Control and Dynamics (2:2:0) Prerequisite: Math. 321.
Dynamics of process systems and associated control systems and instrumentation.

582. Introductory Nuclear Engineering. (3:3:0) Prerequisites: Chem. 106 or 112; Math. 214; Physics 221.
Principles and application of nuclear reactor design.

583. Nuclear Reactor Engineering. (3:3:0) Prerequisite: ChemEng. 582.
Nuclear reactor design, including heat transfer, energy conversion, reactor materials, instrumentation and control, fuel management, economics, and comparison of principal power system concepts.

599R. Cooperative Education: Chemical Engineering. (1-3:0:0 ea.) Prerequisites: consent of department and college coordinators. Students must meet departmental requirements and consult adviser prior to enrollment.
On-the-job training experience. Report required. Six-hour maximum allowed.

672. Non-Newtonian Fluid Mechanics and Heat Transfer. (2:2:0) Prerequisites: Math. 645; ChemEng. 673.
Laminar and turbulent flow and heat transfer for non-Newtonian fluids, two phase flows, flow through porous media, mixing and agitation, engineering applications. Offered on demand.

673. Transport Phenomena. (3:3:0) Prerequisites: ChemEng. 476; Math. 323.
General differential equations of conservation of mass, heat, and momentum; transport coefficients; turbulent flow; interphase transfer, etc.

674. Advanced Thermodynamics and Calorimetry. (2:2:0)
Advanced thermochemistry applied to measurement of heats of mixing, heat of reaction, equilibrium constant, etc. Offered on demand.

675. Thermodynamics of Multicomponent Systems. (3:3:0)
Advanced course involving fundamental concepts and applications in first and second laws, equilibrium and stability, phase equilibrium, homogeneous and heterogeneous chemical equilibrium.

676. Advanced Diffusional Operations. (3:3:0) Prerequisites: ChemEng. 673, Chem. 675, and Math. 323.
General theory of differential and stagewise diffusional and separation operations; multicomponent distillation, extraction, absorption; solution of complex problems; column design and instrumentation. Offered on demand.

677. Creative Skills in Chemical Engineering. (1:1:0)
Applying creativity and prior course work to the solution of relevant open-end problems.

681. Kinetics and Catalysis. (3:3:0) Prerequisite: ChemEng. 478.
Applying fundamental theories of chemical kinetics and transport phenomena to the design of chemical reactors.

683. Advanced Plant Design and Economics. (2:2:0) Prerequisite: ChemEng. 464.

Comprehensive design of chemical plants including feasibility and market surveys, economic evaluations, raw materials, plant layout, process design, instrumentation, materials of construction. Offered on demand.

691R. Seminar for Master's Students. (1:1:0 ea.)

Technical presentations by graduate students, faculty members, and guests.

693R. Special Topics—Graduate. (1-6:Arr.:Arr. ea.)

Offered on demand.

698R. Special Problems—Graduate. (2-6:Arr.:Arr. ea.)

699R. Thesis for Master's Degree. (1-6:Arr.:Arr. ea.)

☐ **Chemistry 769R. Selected Topics in Physical Chemistry.** (1-3:1-3:0 ea.)

791R. Seminar for Doctoral Students. (1:1:0 ea.)

793R. Selected Topics in Chemical Engineering. (1-3:Arr.:Arr. ea.)

Topics vary according to student-faculty research interests. Offered on demand.

799R. Dissertation for Doctoral Students. (1-9:Arr.:Arr. ea.)

Chemistry

Distinguished Professor: Hall

Professors: Anderson, Bills, Blackham, Bradshaw, Broadbent, Butler (Acting Dean, 270 ESC), Castle, Cluff, Goates, Gubler, Hawkins, Izatt, Mangum, Nelson, Ott, Robins, Smith, Snow, Swensen, Thorne (Graduate Coordinator, 227 ESC), Vernon (Assistant Academic Vice-President—Research), White (Biochemistry Graduate Coordinator, 695 WIDB), Wilson.

Associate Professors: Dalley, Hansen, Mangelson (Acting Chairman, 226 ESC), Nordmeyer, Paul, Woolley.

Assistant Professor: Lee.

Undergraduate Program

Graduates in chemistry obtain positions in virtually every industry, and those who have imagination and intellectual curiosity are in special demand to fill research positions. The curriculum in chemistry is both rigorous and intellectually rewarding.

B.S. Degree. A student who wishes to graduate with a major in chemistry approved by the American Chemical Society must successfully complete the following courses: Chem. 111, 112, 226, 227, 351, 352, 354, 355, 461, 462, 464, 491, 514, 523 or 551, 594R (1 hour), and two additional courses chosen from 481, 484, or any of the 500-series chemistry courses. Selection of these advanced courses should be made after consultation with a member of the chemistry faculty. Physical chemistry (461, 462, 464) should ordinarily be taken in the junior year since it is prerequisite to 500-series chemistry classes.

Required supporting courses include Math. 112, 113, and 214; ComSci. 131; Physics 121, 122, 214, and 221; and Engl. 316. Students with exceptional mathematics preparation and those anticipating advanced work in theoretical chemistry should consider taking the series Math. 141 and 142 in place of Math. 112 and 113.

Elective courses should be selected after consultation with an adviser. Some recommendations are as follows: additional advanced chemistry courses, including undergraduate research; German 101 and 102, or ComSci. 231, especially for those planning to do graduate study; ChemEng. 273 for those planning to work in industry after the B.S. degree; Math. 321 and Physics 222, particularly for those specializing in physical chemistry; and additional biological science courses, particularly for those interested in biochemistry or in preparing for medical school.

B.A. Degree. A less intensive major, which meets the minimum University requirements, can be obtained by successfully completing Chem. 111, 112, 226, 227, 351, 352, 353 (2 hours), 461, 462, 464, and 481 or 514 or 521. Required supporting courses include Math. 112, 113, and 214; Physics 121, 122, 214, and 221; and Engl. 316. This degree is particularly suited for a student who is preparing for secondary teaching. Interested students should see the Secondary Education section of this catalog for specific requirements. A few students with exceptional cases and those preparing to teach secondary school are the only students who should consider obtaining the B.A. rather than the B.S. degree.

General. No more than 3 hours of D credit in chemistry may be counted toward the requirements of either of the majors in chemistry. For either major Chem. 105 and 106 may be substituted for Chem. 111, 112, and Chem. 223 may be substituted for Chem. 226 by special permission of the department. The final 10 hours of chemistry credit required for either degree must be taken at BYU.

A few scholarships, including the John Einar Anderson scholarships, are available to qualified chemistry majors.

Premedical and Predental Program. The B.S. degree program in chemistry is an excellent premedical or predental preparation and provides strong career alternatives (see Preprofessional Program section of this catalog). Students electing a chemistry major should be careful to note that the chemistry, mathematics, and physics requirements for this major are significantly different from the minimum level requirements listed in the Preprofessional Programs section. Elective courses in biochemistry and in biological science are especially pertinent for these preprofessional programs.

Minor. A minor in chemistry consists of Chem. 111, 112, 226 (or 105, 106, 223), plus any one of the following sequences: Chem. 351, 352, 353 (2 hours); 461, 462, 464; 252, 481. No more than 3 hours of D credit in chemistry will be counted in meeting this minor requirement.

Suggested Sequence of Courses (B.S. Degree), Four-Year Program

First Year	**F**	**W**
Chem. 111, 112	3	3
Chem. 226		3
Math. 112, 113*	4	4
ComSci. 131		3
Second Year	**F**	**W**
Chem 351, 352	3	3
Chem. 227, 354	3	2
Math. 214	3	
Physics 121, 122	3	3
Engl. 316	3	
Third Year	**F**	**W**
Chem. 355	2	
Chem. 461, 462	3	3
Chem. 464		2
Chem. 491		2
Physics 221	3	
Physics 214		1
Fourth Year	**F**	**W**
Chem. 514		3
Chem. 523 or 551**	(3-4)	(3)
Chem. 594R	½	½
RelC. 491R	1	
Advanced chemistry	2-3	2-3

Suggested Sequence of Courses (B.S. Degree), Three-Year Program***

First Year	**F**	**W**	**Sp**
Chem. 111, 112	3	3	
Chem. 226, 227		3	3
Chem. 351			3
Math. 112, 113*	4	4	

	F	W	Sp
Physics 121, 122		3	3
ComSci. 131		3	
Second Year	**F**	**W**	**Sp**
Chem. 352	3		
Chem. 354, 355	2	2	
Chem. 461, 462		3	3
Chem. 464			2
Math. 214	3		
Physics 221	3		
Physics 214	1		
Engl. 316		3	
Third Year	**F**	**W**	**Sp**
Chem. 594R	½	½	
Chem. 514		3	
Chem. 523 or 551**	(3-4)	(3)	
Chem. 491		1	
Other chemistry	1-3	3	

*Students with inadequate high school preparation in mathematics will take Math. 110 in their first semester, and the math series here suggested will be shifted back one semester.

**Chem. 551 is recommended for those students whose interests are primarily in organic chemistry or biochemistry; Chem. 523 is for those whose primary interest is in analytical, inorganic, or physical chemistry.

***Ordinarily a student must take up to 6 hours of credit in addition to that taken in six semesters and three Spring Terms.

Graduate Program

Programs. Master of Science (M.S.), Master of Arts (M.A.-3 Program), Doctor of Philosophy (Ph.D).

Entrance Examination Required. A written examination of students' undergraduate preparation in chemistry, given during the week preceding their initial registration.

Application Consideration Dates. Same as Graduate School deadlines.

Entry Times. Any regular registration. Students wishing prime consideration for teaching assistantships or other financial aid should submit applications early (March 15 for fall entry).

Teaching. The Chemistry Department relies upon its graduate students for many assignments in laboratory and recitation instruction. Unless students are excused by the faculty, they will be expected to teach a cumulative total of at least two semesters at 20 hours a week during their residency toward the doctoral degree, half of which must come after the first year in residency. Master's degree candidates are expected to teach half this amount.

Master of Science

Prerequisite. Undergraduate major in chemistry or the equivalent. Proficiency in French, German, or Russian; or in mathematics beyond calculus; or in computer science.

Fields. Analytical chemistry; biochemistry (see Graduate Section of Biochemistry); inorganic chemistry; organic chemistry; physical chemistry.

Minors Permissible. Option 1 or Option 2.

Requirements. 24 semester hours plus a thesis (6-hr. min.—699R).

Required Courses: As specified by committee.

Master of Arts

(M.A.-3 Program)

Prerequisite. Undergraduate major in chemistry or the equivalent.

Requirements. The department offers the three-year master's degree program wherein the student wishing to prepare for high school or junior college teaching may obtain the Master of Arts degree in chemistry. This program will normally begin at the end of the student's sophomore year. Details may be obtained from the chairman of the Chemistry Department.

Field. Chemistry teaching.

Doctor of Philosophy

Prerequisites. Baccalaureate degree in chemistry or the equivalent. Proficiency in French, German, or Russian; in mathematics beyond calculus; or in computer science.

Fields. Analytical chemistry; biochemistry (see Graduate Section of Biochemistry); inorganic chemistry; organic chemistry; physical chemistry.

Minors Permissible. Any approved minor.

Requirements. Approved courses plus a dissertation (18-hr. min.—799R).

Graduate Section of Biochemistry

Graduate degrees in biochemistry are administered by the biochemistry faculty of the Chemistry Department. Qualified faculty in other departments may (with approval of the graduate dean) become active members of the graduate section of biochemistry and serve as members or chairmen of graduate advisory committees.

Programs. Master of Science (M.S.), Doctor of Philosophy (Ph.D.).

Entrance Examination Required. Students are accepted on a provisional basis until: (1) completion of the written appraisal examinations designed to evaluate their competence in undergraduate chemistry and (2) successful removal of deficiencies revealed by this examination. The examination is administered by the graduate section of biochemistry the week preceeding initial registration.

Application Consideration Dates. Same as Graduate School deadlines.

Entry Times. Any regular registration. Students wishing to be considered for teaching assistantships or other financial aid should submit applications early (March 15 for fall entry).

Teaching. Students will be expected to teach a cumulative total of at least two semesters at 20 hours per week.

Master of Science

Prerequisite. Baccalaureate degree in physical, biological, or agricultural sciences from an accredited college or university. Students with bachelor's degrees in fields other than chemistry should have successfully completed one-year courses in organic and in physical chemistry.

Field. Biochemistry.

Minors Permissible. Any established minor in the physical, biological, agricultural, or food sciences; Option 2.

Requirements. Courses (24-semester-hr. min.), thesis (6-hr. min.—699R), annual progress review, and final oral examination, all approved by graduate advisory committee.

The final oral examination for the M.S. will consist of two parts: (1) a public presentation of the candidate's original research described in his or her thesis and (2) a comprehensive examination on course work, research, and thesis.

Required Courses. Chem. 694R (every semester in residence), 685, 686, and 687.

Doctor of Philosophy

Prerequisite. Baccalaureate degree in physical, biological, or agricultural sciences from an accredited college or university. Students with bachelor's degrees in fields other than chemistry should have successfully completed one-year courses in organic and in physical chemistry.

Field. Biochemistry.

Minors Permissible. Any established minor in the physical, biological, agricultural, or food sciences, or combination thereof.

Requirements. Courses, research, annual progress review, oral proposition, comprehensive examination, and dissertation (18-hr. min.—799R), all approved by graduate advisory committee.

The oral examination on the dissertation consists of two parts: (1) a public presentation of candidate's original research described in the dissertation and (2) an oral examination, primarily on the dissertation.

Required Courses. Chem. 694R (every semester in residence), 685, 686, and 687.

Courses

100. Elementary College Chemistry. (3:3:0) Home Study also. (G-PS)
Structure of matter and the chemical consequences of that structure. For nonscience majors.

102. Introductory Chemistry. (5:5:0) (G-PS)
Primarily for students in the biological sciences who require a broad introduction to general, inorganic, and organic chemistry relating to biology at the molecular level. Preparation for Chem. 281.

103. Introductory Chemistry Laboratory. (1:0:3) (G-PS) Prerequisite: completion of or concurrent registration in Chem. 102.
Manipulative laboratory techniques required for simple classical experiments in general and organic chemistry.

105, 106. General College Chemistry. (4:4:0, 4:3:3) (G-PS) Prerequisite: Math. 110 concurrently with Chem. 105.
Standard full-year general chemistry course primarily for students in engineering and the biological sciences.

107. Materials Chemistry and Electrochemistry. (2:1:3) Prerequisites: Chem. 105 and concurrent registration in Math. 112.
Materials structure, electrochemical phenomena, and applications in electronics.

111, 112. Principles of Chemistry. (3:4:0 ea.) F.W. (G-PS) Prerequisite: Math. 110 concurrently with Chem. 111; Math. 111 prerequisites to Chem. 112. High school chemistry and physics strongly recommended.
Recommended first-year course for majors in chemistry, chemical engineering, and physics and for majors in the biological sciences desiring a more fundamental and mathematical approach to chemistry.

223. Quantitative and Qualitative Analysis. (5:3:6) (G-PS) Prerequisite: Chem. 106 or consent of instructor.
Principles of chemical equilibrium, quantitative chemical measurements, and qualitative detection of selected chemical elements.

226, 227. Introductory Analytical Chemistry. (3:1:6 ea.) Prerequisites: for Chem. 226, concurrent registration in Chem. 112; for 227, completion of Chem. 112 and 226 and ComSci. 131.

252. Introductory Organic Chemistry. (5:4:3) (G-PS) Prerequisite: Chem. 106.
For students outside the physical sciences whose disciplines require supporting background in chemistry.

281. Introductory Physiological Chemistry. (3:3:0) (G-PS) Prerequisite: Chem. 102.
Second-semester course in a sequence with Chem. 102. Students with more extensive preparation in these areas should register for Chem. 481.

284. Physiological Chemistry Laboratory. (2:0:6) Prerequisite: Chem. 281.

350. Physical Chemistry. (3:3:6)

351, 352. Organic Chemistry. (3:3:0 ea.) (G-PS) Prerequisite: Chem. 106 or 113.
Standard one-year organic chemistry course for majors in chemistry, chemical engineering, and the biological sciences.

353. Organic Chemistry Laboratory. (1-2:0:3-6) Prerequisite: Chem. 351.
For predentistry and premedicine majors, and others.

354, 355. Organic Chemistry Laboratory. (2:0:6 ea.) Prerequisite: Chem. 351; 352 and 354; respectively.
For chemistry and other science majors.

461, 462. Physical Chemistry. (3:3:0 ea.) (G-PS) Prerequisites: Chem. 112 or 223; Physics 221; Math 113 and previous or concurrent registration in Math. 214.

464. Physical Chemistry Laboratory. (2:0:6) (m) Prerequisite: completion of or concurrent registration in Chem. 462.

481. Biochemistry. (4:4:0) Prerequisites: Chem. 252 or 353.
Introductory course for undergraduate chemistry majors or students in any of the biological sciences who contemplate pursuing advanced degrees, including medicine.

484. Biochemistry Laboratory. (2:0:6) Prerequisites: Chem. 481.
Classical procedures and instrumentation used in biochemical research.

491. Chemical Literature. (2:2:0)

501. Symmetry in Chemistry. (2:2:0)

514. Inorganic Chemistry. (3:3:0)

518. Inorganic Syntheses. (2:0:6)
Offered 1979-80 and alternate years.

521. Analytical Chemistry. (2:2:0) Prerequisite: Chem. 464.

522. Chemical Instrumentation. (2:0:6)

523. Instrumental Analysis. (3:1:6) Prerequisite: completion of or concurrent registration in Chem. 464.

551. Systematic Identification of Organic Compounds. (3-4:2:3-6)

552. Advanced Organic Chemistry. (3:3:0)

561. Chemical Thermodynamics. (3:3:0) Prerequisite: Chem. 462.

562. Advanced Chemical Thermodynamics. (2:2:0) Prerequisite: Chem. 561.
Offered 1979-80 and alternate years.

563. Reaction Kinetics. (3:4:Arr.:0)

564. Nuclear and Radiochemistry. (2:2:0) Prerequisite: Chem. 462.
Offered 1978-79 and alternate years.

565. Introduction to Quantum Chemistry. (3:3:0) Prerequisite: Chem. 462.

594R. General Seminar. (½:1:0 ea.) Required every semester in residence of all senior ACS-approved majors and graduate students in chemistry.

598R. Special Problems. (1:6:Arr.:Arr.) Registration by permission.

600. Directed Teaching in Chemistry. (1:1:0)

601. Geometry of Atoms and Molecules. (2:2:0)
Offered 1978-1979 and alternate years.

611. Chemistry of Main-Group Elements. (3:3:0)
Offered 1979-80 and alternate years.

612. Chemistry of Transitional Elements. (3:3:0)
Offered 1978-79 and alternate years.

658. Organic Synthesis. (3:1.6)
Offered 1978-79 and alternate years.

685, 686. Advanced Biochemistry. (3:3:0 ea.)

687. Advanced Biochemistry Laboratory. (2:0:6)

694R. Biochemistry Seminar. (1:1:0 ea.)
Current topics discussed by guests, faculty, and graduate students. Required of graduate students in biochemistry each semester in residence.

697R. Master's Candidate Research. (1-6:Arr.:Arr.)

699R. Thesis for Master's Degree. (6-9:Arr.:Arr. ea.)

719R. Selected Topics in Inorganic Chemistry. (1-3:1-3:0 ea.)

729R. Selected Topics in Analytical Chemistry. (1-3:1-3:0 ea.)

751. Mechanisms of Organic Reactions. (3:3:0)
Offered 1979-80 and alternate years.

757. Chemistry of Natural Products. (3:3:0)
Offered 1978-79 and alternate years.

758. Heterocyclic Compounds. (3:3:0)
Offered 1979-80 and alternate years.

759R. Selected Topics in Organic Chemistry. (1-3:1-3:0 ea.)

761. Statistical Mechanics. (3:3:0)
Offered 1978-79 and alternate years.

765. Quantum Chemistry. (3:3:0) Prerequisite: Chem. 565 and concurrent registration in Chem. 501.
Offered 1979-80 and alternate years.

769R. Selected Topics in Physical Chemistry. (1-3:1-3:0 ea.)

789R. Selected Topics in Biochemistry. (1-3:1-3:0 ea.)

797R. Doctoral Candidate Research. (1-9:Arr.:Arr. ea.)

799R. Dissertation for the Ph.D. Degree. (1-9:Arr.:Arr. ea.)

Child Development and Family Relationships

Professors: Allred, Burr, Cahoon, Cannon, Knowles, Mead, Moss (Chairman, 1239 SFLC), Porter, Rollins, Stahmann, Thomas.
Associate Professors: Bahr, Barlow, Hoopes, Larsen, Olson, Price, Scoresby, Tanner, Taylor, Vance.
Assistant Professors: Galbraith, McKee.
Instructors: Olsen, Tyndall.

Undergraduate Program

The Department of Child Development and Family Relationships seeks to make a contribution to the goals of Brigham Young University by preparing students to be successful family members and by preparing students to be child and family professionals.

Two majors are offered at the undergraduate level: one in early childhood education and one in child development and family relationships. Courses at the undergraduate level provide (1) knowledge and insights concerning basic developmental and behavioral characteristics of the child from conception to adulthood, including dating, courtship, marriage, and family behavior throughout the family life cycle, and (2) help in developing skills in working with children and families.

The CDFR department is one of the leading departments in the nation. Professionally recognized faculty, excellent facilities in child development laboratories, and opportunities for experience provide bases for sound education.

The Early Childhood Education Major is a cooperative program involving the Child Development and Family Relationships Department and the Department of Elementary Education. This major provides the student with certification to teach preschool, kindergarten, and first through sixth grades of elementary school. Requirements include the five-phase program of the Elementary Education Department curriculum, the 19 hours of "other related course work" specified by the Elementary Education Department for certification, and 22 hours of course work in child development and family relationships (commonly referred to as CDFR). Phase IV in elementary education (ElEd. 400—the student teaching experience) must be completed in first, second, and third grades. Program guides and advisement for this major are available in the College of Family Living Advisement Center and in the Teacher Clearance Office Advisement Center.

The Child Development and Family Relationships Major is organized to train students to be effective family members and child and family professionals. Course requirements call for 16-19 required hours from CDFR 210, 361, 410, 460, 492, and FRM 240; at least 10 hours in CDFR electives, to be chosen from any undergraduate CDFR classes not required above; and 14 hours of elective related course work from other departments to complete a total of 40 hours for the major (no D grade is allowed in the 40-hour major). How many elective classes from other departments are selected depends upon how many elective hours are chosen in CDFR. This major also allows the student freedom to select 30 or more elective hours above and beyond general education and the CDFR major requirements. Students taking this major and seeking vocational activity will find it in various kinds of positions: industry, YWCA, YMCA, hospitals, and public and private organizations dealing with human relationships, families, and children—wherever there is a need for someone skilled in working with people.

Requirements for a Minor in CDFR

CDFR 210, 361; one course from 410, 445, or 460; and CDFR electives to total 14 hours constitute a minor in CDFR. BYU social work majors desiring a CDFR minor are required to take CDFR 210, 361, 445; and 5 elective hours from CDFR 310, 312, 360, 410, 440, or 460 (no D grade is allowed in the minor).

BYU elementary education majors desiring a minor in CDFR should take 14 hours from CDFR 210, 305, 310, 312, 222, 362, 410, 430, 445, 590R, and 595R.

Associate Degree in Child Development

The associate degree in child development offers specific training in dealing with children and parent education and meets the standard of the national Associate in Child Development Program. Courses include observing and assisting in a kindergarten and nursery school, student teaching in the nursery school, child guidance courses, and related course work from other departments.

Graduate Program

At the graduate level, programs are offered in child development and family relationships, marriage and family counseling, and family studies. Emphasis may be given to early childhood education and/or family life education as negotiated with the department. The graduate program is organized on a competency base, and information is available through the graduate secretary's office (227 SFLC).

Undergraduate students with any thought of doing graduate work within the department should examine the graduate requirements or visit the graduate secretary's office (227 SFLC) for help in determining elective hours of most benefit. Especially relevant are basic theory and research courses in social sciences.

Programs. Master of Science (M.S.) degree is possible in child development (emphasizing early childhood education), family relationships (emphasizing family life education), and marriage and family counseling. Specializations in early childhood education and family life education are available. Doctor of Philosophy (Ph.D.) degree is possible in child development and family relationships, family studies (cooperative program with sociology), and marriage and family counseling See Family Studies section of catalog for special requirements.

Entrance Examination Required. An oral evaluation interview with all Ph.D. candidates. When a personal meeting is not feasible, additional written information about the student's background and academic goals will be requested. The MMPI is required of all applicants in the marriage and family counseling area.

Application Consideration Dates. Completed applications must be submitted to University Admissions by January 1. The CDFR Department acts on submitted applications in the month of March and candidates will be notified by April 1. Depending upon enrollment, a limited number of applications for Winter Semester may be considered on October 15 for child development or family relationships programs, but this is uncommon.

Entry Times. Fall Semester only for marriage and family counseling. Sometimes openings for both child development and family relationships may be available Winter Semester. Background work may be completed during the Spring or Summer Terms preceding a Fall Semester entrance.

Master of Science

Prerequisites. An introductory statistics course that includes inferential statistics (i.e., Sociol. 205, Stat. 221, or Stat. 552 at BYU) and a research methods course (i.e., Psych. 369 or Sociol. 300). In addition, area prerequisites are—

Family relationships: CDFR 460 and an upper-division undergraduate course in social psychology or sociological theory.

Child development: CDFR 410 and an upper-division undergraduate course in personality or learning theory.

Marriage and family counseling. CDFR 410 or 460, or equivalent, and an upper-division undergraduate course in learning and/or personality theory.

Fields. Child development, family relationships, marriage and family counseling.

Special emphasis in early childhood or family life education is currently available as an Option 2 program.

Minors Permissible. Any minor approved by the advisory committee, or Option 2.

Requirements. Acquire and demonstrate the competence identified for the degree.

Required Courses. As designated by committee.

Doctor of Philosophy

Prerequisites. A master's degree in this or a related field, or the equivalent.

Fields. Child development and family relationships, family studies, marriage and family counseling.

Minors Permissible. Any minor approved by the advisory committee.

Requirements. Satisfy University residence identified for the degree; pass a written comprehensive examination; and complete an acceptable dissertation, including enrollment for 18 hours of dissertation credit.

Cooperative Family Studies Program

Contact Dr. Boyd Rollins, 203-C SFLC.

Courses

130. Human Social Behavior. (1:0:2) Prerequisite: freshman standing.

Experiential learning to improve ability to develop close relationships and a more favorable self-concept.

210. Child Development. (3:3:1) Home Study also. (G-SS)

Growth and development of the child and his or her relationships with family, peers, and teachers from infancy through adolescence. One hour observation per week as part of preparation.

222. Introduction to Early Childhood Education. (3:2:8) Prerequisite: CDFR 210.

Four weeks each in nursery school and public kindergarten assisting classroom teachers. Includes two-hour weekly seminar.

261. The Latter-day Saint Family. (2:2:0) Home Study also.

Place of the family in LDS doctrine and philosophy, together with application of basic religious principles to marriage and family relationships Comparison of LDS and non-LDS families in time and space.

305. Development in Infancy. (3:2:2) (m) Prerequisites: CDFR 210, Zool. 205.

Physical, cognitive, and social development characteristics during the first 18 months. Implications for guidance and care in the family unit.

310. Child Development in Subcultures. (2:2:0) Prerequisite: CDFR 210.

Intellectual, social, emotional, and physical development of children, as affected by subcultural phenomena.

312. Principles of Child Guidance. (2:2:0) Home Study also. Prerequisite: CDFR 210.

Applying understanding of child behavior and psychodynamics of family interaction to the guidance of children. Behavior and guidance principles studied directly in human development laboratories. Helpful to parents and prospective parents.

330. General Introduction to Women's Studies. (3:2:1)

Status of women; their history, images, roles, and socialization.

360. Achieving Success in Marriage. (3:3:0) Home Study also. (G-SS)

Principles and skills which help establish and maintain a quality marital relationship, as applied to mate selection and the early years of marriage.

361. (CDFR-Sociol.) Family Relationships. (3:3:0) Home Study also. (G-SS)

Interaction and interpersonal relationships through stages of the family life cycle; influence of the family on its members in developing values, goals, attitudes, and behavior patterns.

362. The Child in the Family. (3:3:0)

Family influence upon values, goals, attitudes, and role behavior of children and implications for the child's operation in educational systems.

365. Achieving Success in Parenthood. (3:3:0)

Sequel to CDFR 360. Principles and skills which promote effective parenting and healthy family relationships.

410. Advanced Child Development. (3:2:2) Prerequisites: CDFR 210, 361; Psych 111 or Sociol. 111, Zool. 205.

Physiological, intellectual, social, and emotional development of the preschool and school-age child. Two hours of observation and discussion required each week.

422. Methods and Practicum in Early Childhood Education. (1-8:Arr..Arr.) Prerequisites: CDFR 210 and 222 or consent of instructor. Applicants must register one semester in advance.

Planning, curriculum, development, and experience in teaching and supervising preschool children.

430. Community and Professional Responsibilities to Children and Families. (2:2:0) Prerequisite. CDFR 410 or 460.

Resources of the community, relative to the welfare of children and families Responsibilities of professional persons working with children and families.

440. Family Life in the Middle and Later Years. (2:2:0) Prerequisite: CDFR 361.
Adjustments in middle and later years due to physical, emotional, and social changes, emphasizing needs that arise from changes in family relationships, living arrangements, and employment.

445. Modifying Family Behavior: Principles and Practices. (3:3:0) Prerequisites: CDFR 210, 361, or consent of instructor.
Altering disturbing behavior patterns of children within the family framework. Observations of family counseling provided.

460. Marriage and Family Interaction. (3:3:0) Prerequisites: CDFR 210, 360, and 361; Sociol. 111 or Psych. 111.
Advanced appraisal of courtship, marriage relationships, and family interaction. A professional course designed primarily for majors in CDFR and related fields.

461. The Family and the Law (3:3:0) Prerequisite: CDFR 360 or 361.
Legal aspects of marriage and family life, such as marriage statutes, property rights, separation and divorce, adoption, custody of children, wills, etc.

492R. Seminar in Theory and Concepts. (2:2:0 ea.) Prerequisite: 12 hours in CDFR or consent of instructor.
Evaluation and integration of basic concepts. For senior students in CDFR.

501R. Workshop in Child Development. (1-2:1-2 wks., 8 hrs./day:0 ea.) Prerequisite: 8 hours in CDFR or consent of department chairman.
Intensive study in applying principles of child development and child guidance.

502R. Workshop in Family Relationships. (1-2:1-2 wks., 8 hrs./day:0 ea.) Prerequisite: 8 hours in CDFR or consent of department chairman.
Intensive study in applying principles of family relationships.

503R. Workshop in Marriage and Family Counseling. (1-2:1-2 wks., 8 hrs./day:0 ea.) Prerequisite: 8 hours in CDFR or consent of department chairman.
Intensive study in applying principles of marriage and family counseling.

514. Theories of Child Development. (3:3:0) Prerequisite: CDFR 410.
Intensive investigation of theoretical frameworks, models, and concepts of dominant contemporary theories in child development.

522R. Seminar in Early Childhood Education. (2:2:4 ea.) Prerequisites: CDFR 422 and consent of instructor.
Teacher skills: developing, applying, measuring, and evaluating effective techniques. Curriculum: selecting, organizing, and creating curriculum materials for young children.

530. Problems of Teaching Marriage and Family Relationships in College. (2:2:0)

531. Supervised Teaching in Family Life Education. (1-3:2:1-8 ea.) Prerequisite: CDFR 530 or equivalent or consent of instructor.

540. Introduction to Theories for Marriage and Family Counseling. (3:3:0) Prerequisite: CDFR 460. Recommended: CDFR 461.
Emphasizes current theoretical problems.

555R. Beginning Practicum in Marriage and Family Counseling. (3:2:2-4 ea.) Prerequisites: CDFR 540 and consent of instructor.
Experience in counseling individuals, premarital and marital dyads, and families.

556. Basic Skills in Marriage and Family Counseling. (3:3:3) Prerequisite: consent of instructor.
Counseling theories, issues and techniques as applied in family life education, child development, and related areas.

560. (CDFR-Sociol.) Contemporary Theories about the Family. (3:3:0) Prerequisite: CDFR or Sociol. 361.
Contemporary theories and research about the family, emphasizing role, exchange, and systems theories.

590R. Readings in Child Development and Family Relationships. (1-2:1-2:0 ea.) Prerequisites: CDFR 410 or 460 and consent of instructor.
Discussions and reports of current readings.

595R. Special Topics in Child Development and Family Relationships. (1-2:1-2:0 ea.) Home Study also. Prerequisites: for CDFR major—CDFR 410 or 460 and consent of instructor; for Home Study associate degree major emphasizing CDFR—approval of this course with faculty adviser as final project.
Individual study for qualified students.

600. (CDFR-Sociol.) Advanced Research Methods. (3:3:0) Prerequisite: Sociol. 300 or consent of instructor.
Investigation of data.

601. (CDFR-Sociol.) Seminar in Survey Research. (3:3:0) Prerequisites: Sociol. 300 or equivalent, graduate standing in sociology or allied discipline.
Survey research techniques of the behavioral sciences, emphasizing research and sampling designs.

602. (CDFR-Sociol.) Experimental Design. (3:3:0) Prerequisites: CDFR-Sociol. 600R and Stat. 501 or equivalent or consent of instructor.

603R. (CDFR-Sociol.) Research Practicum. (3:1:8 ea.)
Emphasizes design, data collection, data analysis, and write-up.

610. Physical and Intellectual Development of Children. (3:3:0) Prerequisite: CDFR 514.
Current theories and research on physical and intellectual development from conception through adolescence.

611. Emotional and Social Development of Children. (3:3:0) Prerequisite: CDFR 514.
Current theories and research on emotional and social development from conception through adolescence.

622R. Advanced Seminar in Early Childhood Education. (2:2:Arr. ea.) Prerequisites: CDFR 210 and 422.
Supervision in ECE: practical experience in applying supervision principles. Administration of ECE: theories and issues applied to administrative processes and skills.

623. History, Theories, and Current Issues in Early Childhood. (3:2:2) Prerequisite: consent of instructor.
History, background, philosophies, and models of preschool education. Examines current issues and innovations.

630. Parent Education. (2:2:0) Prerequisite: CDFR 410 or 460.
Organizing and presenting parent study programs.

640. Theories of Counseling Marital Dyads in Groups. (3:3:0) Prerequisite: CDFR 540.
Applying group theories to counseling of marital and family groups. Participation in group research.

641. Pharmacological Aspects of Family Counseling. (2:2:0)
Survey of basic pharmacological principles as applied to family counseling, including anatomy and physiology of the nervous systems, to make application to pharmacologically categorized agents.

645. Dysfunctional Families. (3:4:0) Prerequisite: CDFR 540.
Clinical approach to families with mental, sexual, and social behavior dysfunctions.

647. Assessment in Marriage and Family Counseling. (3:3:0) Prerequisite: Stat. 501 or Stat. 552, consent of instructor.
Background, development, administration, scoring, and interpretation of selected assessment instruments.

649. Systems Analysis for Marriage and Family Counseling. (3:2:2) Prerequisites: CDFR 445, 540.
Applying systems theory in developing intervention for use with marriages and families.

655R. Intermediate Practicum in Marriage and Family Counseling. (1-4:1:6) Prerequisites: CDFR 540 and consent of instructor.

Experience in counseling individuals, premarital and marital dyads, families, groups of dyads, and multiple families.

660. Parent-Child Interaction. (3:1:2)

Developing and testing conceptual models of parent-child interaction.

692R. (CDFR-Sociol.) Seminar in Family Relationships. (1-2:1-2:0 ea.)

Topics vary: the premarital dyad, the marital dyad, issues in family interaction, and familial role structure.

699R. Thesis for Master's Degree. (6-9:Arr.:Arr. ea.)

730. Seminar in Family Life Education. (2:1:2) Prerequisite consent of instructor.

740. Adlerian Theory for Marriage and Family Counselors. (3:3:0) Prerequisite: CDFR 445.

749. Social Learning in Family Counseling. (3:2:2) Prerequisites: CDFR 540, 649.

Comparison of behavior and modification and cognitive theory. Includes supervision.

755R. Advanced Practicum in Marriage and Family Counseling. (1-4:1:10 ea.) Prerequisites: CDFR 740 and consent of instructor.

791R. Seminar in Child Development. (1-2:0:0 ea.) Prerequisite: must be a Ph.D. candidate in child development.

792R. (CDFR-Sociol.) Family Symposium. (1-2.1-2:0 ea.)

Presentation and discussion of professional papers about the family.

793R. Seminar in Marriage and Family Counseling. (1-2:1-2:0 ea.)

794. Special Topics in Child Development. (1-2·1-2:0)

799R. Dissertation for the Ph.D. Degree. (1-9:Arr.:Arr. ea.)

Civil Engineering

Professors: C. Barton, J. Barton (Chairman, 368-C CB), Budge, Christiansen, Firmage, Fuhriman, Karren, Rollins, Wilson.
Associate Professors: Calder, Durrant, Goodwin, Merritt, Thurgood.
Assistant Professor: Miller.

Undergraduate Program

The Department of Civil Engineering offers professional programs leading to the degrees of Bachelor of Science in civil engineering, Master of Engineering, Master of Science, and Ph.D. The curriculum is accredited by the Engineers' Council for Professional Development (ECPD) as a professional engineering curriculum.

Course work is offered in the areas of (1) solid mechanics and materials, (2) soil mechanics and foundation engineering, (3) structural mechanics and structural engineering, (4) highway and transportation engineering, (5) water resources, and (6) environmental engineering. The professional education at BYU emphasizes a strong science foundation in physics, chemistry, and mathematics. Application of mathematics is accomplished early in the program through a correlation with physics, beginning the freshman year. An understanding of civil engineering problems on an elementary but fundamental level is afforded the student in the freshman and sophomore years.

The extensive background of the faculty will prove valuable to those who wish to undertake special projects in their undergraduate work or research topics in their graduate work. Seminar work and participation in technical meetings sponsored by student organizations provide a rich beginning for a career in civil engineering. Professional opportunities upon graduation in this field exist in research and development, design, construction, sales engineering, teaching, business management, and many other areas

Entrance Requirememts

For both the general entrance requirements of the University and the particular requirements specified for the College of Engineering Sciences and Technology, see those sections of this catalog

Grade Requirements

To receive the B.S. degree in civil engineering, a student must complete courses satisfying University and departmental requirements, including a minimum cumulative grade-point average of 2.0 (C). A cumulative average grade of C or better must be maintained in all engineering subjects; otherwise, the student is placed on probationary status in the department. No more than 9 hours of D credit in engineering subjects may be counted toward graduation. A student must achieve an average of C or better in each area of chemistry, mathematics, and physics.

General Education Requirements

Engineering students are subject to either the new or the former general education program requirements. Complete information is available in the general education programs section of this catalog. The following exceptions and suggestions apply to the former general education program.

1. The biological science requirements for all engineering science majors is 4 semester hours. Civil engineers will meet the biological sciences requirement by taking BioAg 200 and Micro. 381 for a total of 5 credit hours.
2. It is recommended that the student take Econ. 110, Psych. 111, or Sociol. 111 in satisfying the social science group requirements.

Students should understand that general education requirements (including religion) are in addition to the course requirements shown in the typical program. Students are urged to obtain a complete integrated course program from their department office.

Civil Engineering Technician

Associate Degree (A.S.)

Civil engineering technicians are valuable employees in the various areas of civil engineering. They work closely with professional engineers in industrial firms, government agencies, and consulting organizations. They are often individually responsible for obtaining and analyzing data, operating equipment, planning and carrying out experiments, and so forth. They are able to perform tests, solve mathematical and engineering formulas, make accurate measurements, and supervise the work of others. The program listed below will provide the basic educational preparation necessary to perform much of the work encountered

First Year	F	W	S
CivEng. 100A, B	½	½	
Math. 121, 122	3	3	
DesTech. 111			2
Physics 105, 107	4		
Physics 106, 108		4	
Chem 105, 106	4	4	

Second Year	F	W
CivEng. 200A, B	½	½
Math. 223	3	
CivEng. 211, 212	2	2
CivEng. 201, 303	2	3
DesTech. 212	3	
CivEng. 305		2
CivEng. 321		3

Students completing the A.S. degree requirements may find it desirable to complete the work for a B.S. degree in civil engineering. With proper planning, the 50 credit hours of required courses shown below plus additional general education requirements may be completed in two more years. Students are advised to decide as early as possible in their first two years of study and to seek the help of an adviser.

Courses Required to Obtain a B.S. Degree after A.S. Degree in Civil Engineering (Minimum)

Math. 113, 214, 321	10
CivEng. 391A, B	1
CivEng. 304	3
CivEng. 332	3
Geol. 330	3
Plus 4th year	30

Requirements for the Bachelor of Science Degree

Students first enroll in the general curriculum of civil engineering and continue in a prescribed technical program for three years. In the fourth year they have the opportunity of selecting technical electives to strengthen a chosen field of interest. Also, in the fourth year, students may elect to begin study for the regular Master of Science or Master of Engineering degree.

All students must satisfy the general education requirements of the University and the departmental requirements, including 9 hours of technical electives, in order to earn the B.S. degree. This will normally take the student four academic years to complete. The departmental course requirements are given in the technical flow chart, which may be obtained from the department office in 368 CB. This chart also indicates the technical prerequisite requirements for each course. Single connecting lines indicate prerequisites, and double connecting lines indicate corequisites. A typical sequence of courses for the standard four-year program is also given herein.

The student who has sufficient high school preparation in graphics and mathematics may begin these programs with DesTech. 212 and Math. 112, respectively. (If not sufficiently prepared, the student must take DesTech. 111 and Math. 110 as beginning courses.

Engineering students may register for 18 hours, exclusive of physical education, in any one semester without obtaining special permission.

Suggested Sequence of Courses for the Civil Engineering Bachelor of Science Degree

First Year	**F**	**W**
Math. 112, 113	4	4
Physics 121, 122	3	3
CivEng. 100A, B	½	½
DesTech. 212	3	

Second Year	**F**	**W**
Math. 214, 321	3	3
CivEng. 201, 303	2	3
CivEng. 211, 212	2	2
CivEng. 200 A, B	½	½
Chem. 105, 106	4	4
Micro. 121		3

Third Year	**F**	**W**
CivEng. 310, 304	2	3
CivEng. 321, 332	3	3
Geol. 330; Micro. 381	3	2
ElecEng. 301, 302	2	2
CivEng. 305		2
CivEng. 391A, B	½	½
Physics 221	3	

Fourth Year	**F**	**W**
CivEng. 471		3
CivEng. 432, 431	2	3
CivEng. 423, 424	3	3
CivEng. 341	3	
CivEng. 361	3	
Technical elective	3	6
CivEng. 491A, B	½	½

Nine credits of technical electives may be selected from 400- or 500-series courses in civil engineering. Courses in other departments may be taken for the technical elective requirement if approved by the Department of Civil Engineering

Three-Year Program for the Bachelor of Science Degree

The department offers courses so that the student may complete a B.S. program in three academic years by attending certain Spring and Summer Terms. A typical three-year sequence of courses is outlined below.

Typical Program

First Year	**Su**	**F**	**W**	**Sp**
DesTech. 212	3			
CivEng. 100A, B		½	½	
Math. 112, 113, 214, 321	4	4	3	3
Physics 121, 122, 221		3	3	3
CivEng. 201, 211			2	2
Chem. 105			4	

Second Year	**F**	**W**	**Sp**
CivEng. 200A, B	½	½	
CivEng. 303, 304, 305	3	3	2
CivEng. 212, 321	2	3	
Chem. 106; ElecEng. 301, 302	4	2	2
Micro. 121, 381	3	2	
CivEng. 310, 332; Geol. 330	2	3	3

Third Year	**F**	**W**	**Sp**
CivEng. 431, 432	3	2	
CivEng. 423, 424	3	3	
CivEng. 341, 471	3	3	
CivEng. 361	3		
Technical elective	3	6	
CivEng. 391A, B	½	½	

Integrated Master's Program

At the end of the sophomore year or during the junior year of the civil engineering curriculum, a student who desires to obtain a master's degree in civil engineering (either M.E./M.S.) may elect to enter the integrated master's program. The purpose of this program is to afford students greater flexibility in scheduling their course work than is usually available through the traditional B.S. degree followed by a normal M.E./M.S. degree program. In this program students may work toward both the bachelor's and master's degrees simultaneously and receive both simultaneously upon graduation at the end of their program (normally, five years from freshman matriculation). At the end of the sophomore year, students must have a cumulative GPA of 2.5 or more in their civil engineering program. All credit to be counted toward the master's degree must carry a cumulative GPA of 3.0 or better.

Prior to completion of the final 30 hours of course work, the student will submit a formal application for admission to the Graduate School. At this time the student must obtain certification from the undergraduate dean's office that there are only 30 hours remaining to be completed for the program. Upon certification, the student will register in the Graduate School.

Prior to completion of the final 15 hours of course work, the student must file with the Graduate School a final schedule of courses which specifically identifies all technical elective courses and which bears the signatures of the advisory committee and the graduate coordinator or the department chairman. The form for this may be obtained from the department secretary.

Interested students should contact the department graduate coordinator for procedures, application forms, and other details.

Prearchitecture Curriculum Program

Brigham Young University does not have a school of architecture. However, civil engineering is an excellent preparatory program for architecture. Review the prearchitecture write-up in the College of Engineering Sciences and Technology section of this catalog. Students are also invited to come into the Civil Engineering Department for counseling concerning a good prearchitecture program.

Graduate Program

Programs. Master of Science (M.S.), Master of Engineering (M.E.). (Students anticipating doctoral work in this area are referred to the College of Engineering Sciences and Technology section of this catalog.).

Entrance Examination Required. Graduate Record Examination required for applicants from non-ECPD (Engineers' Council for Professional Development)—accredited schools.

Application Consideration Dates and Entry Times. Same as the Graduate School schedule.

Master of Science

Prerequisites. A bachelor's degree in civil engineering or its equivalent. (Students with other backgrounds will also be considered.)

Fields. Geotechnical engineering, structures and structural mechanics, transportation engineering, water resources and environmental engineering.

Requirements. Minimum of 25 semester hours plus thesis, CivEng. 699R (6-hr. min).

Required Course. CivEng. 691R (1).

Master of Engineering

Prerequisite. A bachelor's degree in civil engineering or its equivalent. (Students with other backgrounds will also be considered.)

Fields. Geotechnical engineering, structures and structural mechanics, transportation engineering, water resources and environmental engineering.

Requirements. Minimum of 27 semester hours plus a project, CivEng. 698R (3-hr. min).

Required Course. CivEng. 691R (1).

Doctor of Philosophy

This program is administered by an interdepartmental committee. For further details see the College of Engineering Sciences and Technology section of this catalog.

Courses

100A,B. Introduction to Civil Engineering 1. (½:0:0 ea.)
Fields and profession of civil engineering; principles involved in solving engineering problems.

200A,B. Introduction to Civil Engineering 2. (½:0:0 ea.)
Continuation of CivEng. 100A,B. Computational methods applied to civil engineering projects.

201. Engineering Mechanics—Statics. (2:2:0) Home Study also. Prerequisite: Physics 121.
Introductory concepts of mechanics: force systems in equilibrium, resultants, friction, centroids.

211. Elementary Surveying. (2:1:3) Prerequisites: Math. 110, DesTech. 212.
Lectures and fieldwork in measuring distances, angles, and differences of elevation by usual survey methods and instruments. Preparing notes and surveying calculations; and simple traverse.

212. Engineering Surveying. (2:1:3) Prerequisite: CivEng. 211 or equivalent.
Advanced surveying theory, including curves, earthwork, plane coordinate systems, public land surveys, and astronomical observations.

291R. Undergraduate Seminar. (½:0:0 ea.)

301. Engineering Mechanics—Statics and Mechanics of Materials. (3:3:0) Prerequisites: Physics 121, Math. 113.
Force systems, equilibrium laws, centroids and moments of inertia, friction, stresses and deflection in beams, columns, torsion and principal stresses.

303. Engineering Mechanics—Mechanics of Materials. (3:2:3) Home Study also. Prerequisite: CivEng. 201 or equivalent.
Fundamental concepts of elastic stress and strain relations; cylinders and spheres; torsion; beam theory, including bending stresses; deflections; and two-dimensional elastic theory.

304. Engineering Mechanics—Dynamics. (3:2:3) Home Study also. Prerequisites: CivEng. 201 or 301.
Concepts of dynamics applied to particles, systems of particles, rigid bodies, vibration systems, and nonrigid particles systems. Vector notation used.

305. Properties of Materials. (2:1:3) Prerequisite: CivEng. 303.
Physical testing of materials, introduction to failure theories and solid-state concept of behavior of materials, and the mechanics of deformation.

310. Introduction to Civil-Engineering Design. (2:1:3)
Problem definition and typical procedures in engineering analysis and design. Applying digital computer to civil-engineering problems.

321. Elementary Structural Theory. (3:3:0) Home Study also. Prerequisite: CivEng. 201 or 303 or consent of instructor.
Loads on structures, beams, trusses, influence diagrams, three-dimensional analysis, cable systems, approximate analysis of frames, and deflections.

332. Hydraulics and Fluid Flow Theory. (3:3:0) Prerequisite: CivEng. 201.
Fluid properties, fluid statics and dynamics, viscous flow, and boundary layer concepts. Applying theory to pipes and open-channel flow.

341. Elementary Soil Mechanics. (3:2:3) Prerequisites: CivEng. 303, 332; Geol. 330; or consent of instructor.
Physicochemical characteristics of soils. Permeability, seepage, and associate uplift pressure. Consolidation and strength theory, shearing strengths of sand and clay, earth pressure theories, slope stability analysis.

361. Highway Engineering. (3:2:3)
Highway planning, economy, and finance; traffic engineering characteristics; properties of highway materials; rigid and flexible pavement designs.

391A,B. Civil Engineering Seminar. (½:1:0 ea.)
Group discussion of technical and professional activities. Participation by faculty, professional engineers, advanced students, and other invited personnel.

399R. Cooperative Education: Civil Engineering. (1-3:0:0 ea.) Prerequisites: consent of department and college coordinators. Students must meet departmental requirements and consult adviser prior to enrollment.
On-the-job experience.

423. Structural Steel Design. (3:2:3) Prerequisites: CivEng. 305 and 321.
Applying elastic and plastic design concepts. Stress analysis and design of beams, stiffened girders, tension and compression members, and their connections.

424. Reinforced Concrete Design. (3:3:0) Prerequisite: CivEng. 321
Theory and design of reinforced concrete, including columns, beams, slabs, retaining walls, and footings; elastic and ultimate-strength methods of analysis.

431. Hydrology. (3:2:3) Prerequisite. CivEng. 332.
Water in nature; relationships between precipitation, evaporation, infiltration, transpiration, groundwater, and stream runoff.

432. Hydraulic Engineering. (2:2:0) Prerequisite CivEng. 332.
Applying principles of fluid mechanics to design of hydraulic structures.

471. Professional, Economic, and Legal Problems in Engineering. (3:0:0)
Professional, legal, and economic problems: contracts, specifications, accounting, feasibility studies, ethics.

491A,B. Civil Engineering Seminar. (½:1:0 ea.)
Technical and professional activities. Required of all majors.

493R. Civil Engineering Practicum. (Arr.) Prerequisite: consent of instructor.

498R. Directed Studies in Civil Engineering. (Arr.) Prerequisite: consent of instructor.

501. Advanced Mechanics of Materials. (3:3:0)
Introduction to strain energy methods, stresses and strains in beams and curved members, beams on elastic foundations, thick cylinders, torsion, and structural members.

502. Advanced Properties of Materials. (3:3:0) Prerequisite: CivEng. 305 or equivalent.
Mechanics of deformation and fracture of solids; mechanical behavior of materials correlated with atomic scale mechanisms; creep, residual stresses, and fatigue.

503. Applied Elasticity. (3:3:0) Prerequisites: CivEng. 303, Math 321.
Analysis of stress and strain, equations of equilibrium and compatability, generalized Hooke's Law, and energy theorems.

505. Concrete—Its Materials, Uses, and Properties. (3:2:3) Prerequisite: consent of instructor.
Manufacturing and testing cements; concrete materials and concrete mix design; techniques of concrete handling, placing, and treatment; laboratory work.

507. Experimental Stress Analysis. (3:2:3) Prerequisite: CivEng. 303.
Experimental methods of stress determination and their applications to static engineering problems. Mechanical gages; brittle lacquers; electric resistance strain gages; photoelasticity and photostress techniques.

513. Photogrammetry. (3:2:3) Prerequisite: CivEng. 212.
Using terrestrial and aerial photographs to produce maps; vertical and oblique photography and mapping procedures. Stereoscopic viewing and relative position of objects in three dimensions, photo interpretation, sources of errors.

522. Theory of Statically Indeterminate Structures. (3:3:0) Prerequisite: CivEng. 321.
Work and energy methods, moment distribution, slope deflection, and influence lines.

527. Matrix Methods in Structures. (3:2:3) Prerequisite: CivEng. 522.
Development of stiffness and flexibility methods of structural analysis using linear algebra and the digital computer.

528. Finite Element Analysis. (3:0:0) Prerequisite: CivEng. 527 or consent of instructor.
Development of finite elements for an elastic continuum, applications using matrix algebra, and consideration of plates, shells, and frameworks using the digital computer.

531. Water Resources Engineering. (3:2:3) Prerequisites: CivEng. 431, 432.
Planning and design of hydroelectric, flood control, irrigation, drainage, and multipurpose projects involving the use of water resources.

542. Foundation Engineering. (3:2:3) Prerequisite: CivEng. 341.
Subsurface exploration, bearing capacity concepts, settlement of structures, and basic principles of foundation design.

550. Water Quality Management. (3:0:0) Prerequisite: consent of instructor.
Philosophies, objectives, and methods of water quality management; impact of various uses of water quality; behavior of pollutants in receiving waters.

551. Sanitary Engineering. (3:2:3)
Applying public health engineering to design, construction, and operation of water supply and sewage systems.

555. Sanitary Engineering Analysis. (3:1:6) Prerequisites: CivEng. 551, Micro. 381, or equivalent.
Techniques for chemical and biological analysis of the major organic and inorganic constituents of water, sewage, and industrial wastes.

561. Geometric Design of Highways. (3:3:0) Prerequisite: CivEng. 361.
Designing visual aspects of highways. Highway classification, design controls and criteria, and elements of design. Geometrics of vertical and horizontal alignment, cross sections and intersections, and interchanges. Capacity analysis.

562. Traffic Engineering: Characteristics and Operations. (3:3:0) Prerequisite: CivEng. 361 or equivalent.
Traffic flow theory, freeway operations; traffic studies; design of roadways and parking facilities, at-grade intersections, interchanges, channelization; traffic control devices.

565. Transportation in Urban Planning. (3:3:0) Prerequisite: consent of instructor.
Transportation in urban development. Street classification and function. Design elements of streets, intersections, and access drives. Transportation planning studies. Land use transportation interrelationships.

573. (CivEng.—MPA) Introduction to Public Works Management. (3:3:0) Prerequisite: consent of instructor.
Engineering, economic, and management problems inherent in urban public works activities.

599R. Cooperative Education: Civil Engineering. (1-3:0:0 ea.) Prerequisites: consent of department. Students must meet departmental requirements and consult adviser prior to enrollment.
On-the-job experience.

610. Theory and Design of Plates. (3:0:0)
Theory and analysis of thin plates of moderate thickness; membrane theory; anisotrophic considerations.

612. Structural Stability. (3:3:0) Prerequisite:. CivEng. 303.
Elastic and inelastic buckling of columns, analysis of beam columns, torsional-flexural buckling, and buckling of thin plates and cylindrical shells.

615. Structural Dynamics (3:3:0) Prerequisite: CivEng. 304.
Free and forced, damped and undamped, lumped parameter, and multiple-degree-of-freedom linear structures. Approximate methods for nonlinear structures; applications to frameworks and beams.

620. Advanced Structures—Theory and Design. (3:3:0) Prerequisite: CivEng. 522.
Arches, frames, continuous structures on elastic supports, plastic design theory, etc.

621. Thin Shell Structures. (3:3:0) Prerequisites: CivEng. 522, 424.
Domes, arches, and solid plate and hypar structures.

622. Design of Bridge Structures. (3:2:3) Prerequisites: CivEng. 341, 522, 423, 424.
Floor systems, composite and continuous beams and girders, trusses, piers and abutments.

623. Prestressed Concrete. (3:3:0) Prerequisites: CivEng. 522, 424.
Basic theory, pre- and post-tensioning methods. Details of design and fabrication applications to continuous structures.

625. Design of Multistory Structures. (3:2:3) Prerequisites: CivEng. 341, 522, 423, 424, or consent of instructor.

Shear walls, floors, columns, frames, and foundations, using elastic and plastic methods. Frame response to lateral forces.

632. Advanced Hydrology. (3:3:0) Prerequisites: CivEng. 431, 432, or equivalent.
Theory and application to engineering design and investigations.

633. Hydraulic Design of Water-Control Structures. (3:3:0) Prerequisite: CivEng. 432.
Designing dams and appurtenant works and other water-control structures.

634. Flow in Open Channels. (3:3:0) Prerequisite: CivEng. 332.
Principles of water flow in artificial and natural open channels and application to practical problems.

641. Advanced Soil Mechanics. (3:3:0) Prerequisites: CivEng. 341, 542, or equivalent.
Topics include stress distribution in earth masses, shearing strength of soils, consolidation theory, settlement analysis, stability of slopes, and bearing capacity of soils.

643. Earth- and Rock-Fill Structures. (3:3:0) Prerequisite: CivEng. 341 or equivalent.
Design and construction of earth- and rock-fill dams, selecting dam-sites and materials, seepage and pore pressure studies, shearing strength data, stability analysis, and construction controls.

644. Advanced Foundation Engineering. (3:3:0) Prerequisite: CivEng. 641.
Dewatering excavations, embankments on soft clay and natural slopes, pile and caisson foundations, shallow foundation, seismic and vibrant motions, foundations on collapsible and expansive soils.

646. Flow of Fluids through Porous Media. (3:0:0) Prerequisites: CivEng. 332, 341.
Fluid flow in saturated and unsaturated anisotropic media. Darcy's Law and Navier-Stokes equations. Potential theory and conformal mapping, analog solutions.

652. Design of Water Treatment Works. (3:3:0) Prerequisite: CivEng. 555 or equivalent.
Water purification and treatment for culinary, municipal, and industrial uses.

653. Design of Sewage Treatment Works. (3:3:0) Prerequisite: CivEng. 551 or equivalent.
Analysis and design of municipal wastewater treatment facilities.

654. Industrial Waste Treatment. (3:3:0) Prerequisites: CivEng. 551, 555; or equivalent.
Treatment and disposal of industrial wastes; studies of basic industries and their waste problems.

663. Pavement Design. (3:3:0) Prerequisite: CivEng. 361 or equivalent.
Properties and selection of pavement components including soils, stabilized soil, base, subbase, subgrade, and bituminous materials. Design of rigid and flexible pavements.

691R. Civil Engineering Seminar. (½:1:0 ea.)

694R. Selected Problems in Civil Engineering. (1-3:Arr.:Arr. ea.)

697R. Research in Civil Engineering. (2-6:Arr.:Arr. ea.)

698R. Directed Studies in Civil Engineering. (Arr.) Prerequisite: consent of instructor and/or Master's Graduate Committee.
Investigation, study, and presentation of a technical report. Project must be approved by the graduate committee.

699R. Thesis for Master's Degree. (Arr.)

794R. Selected Topics in Civil Engineering. (1-3:Arr.:Arr. ea.)

797R. Research for Doctoral Studies. (Arr.)

799R. Dissertation for Doctoral Students. (Arr.)

Clothing and Textiles

Associate Professor: Jorgensen.
Assistant Professors: Lee, Liechty, Lind (Chairman, 3256 SFLC), Thackeray.
Instructors: Carter, Demos, Holladay, Pottberg, Thompson, Wright .

The clothing and textiles curriculum is designed to help the student understand clothing as it relates to the needs of individuals and families and to provide training in the textile and apparel industries. A knowledge of textiles is emphasized as an aid to wise selection and effective use and care of clothes. Expression of creative abilities is encouraged in the designing, selection, and construction of clothing.

Careers open to majors in this field vary with individual aptitudes and experience and with the choice of appropriate courses from allied departments. Professional opportunities are found in demonstration work, dress designing, dressmaking, fashion illustration, fashion merchandising, fashion promotion, garment manufacturing, institutional purchasing, textile designing, textile promotion, textile testing, and theatre costuming. Students may also prepare for graduate study which can lead to positions in the fields of college teaching, research, and extension services.

Selected junior and senior students in the department have the opportunity to enhance their training in the area of textiles and textile technology by attending North Carolina State University at Raleigh, North Carolina, for a semester or one year. Students who are interested should contact the department chairman.

Campus Couture, sponsored by the department, provides opportunity for practical experience in designing and constructing garments for others. Majors are strongly advised to seek employment at Campus Couture for at least one semester. Employees are selected on the basis of their performance in clothing construction and design classes and successful completion of CloTx. 265.

Major Requirements

Majors are required to complete 28 or more credit hours in the Clothing and Textiles Department and are to take at least one course in each of the following supporting departments within the College of Family Living: Child Development and Family Relationships, Food Science and Nutrition, Interior Environment, and Family Resource Management. Students must also complete the general education requirements prescribed by the University (see the general education program sections of this catalog).

Students selecting Options 1 or 4 will receive the Bachelor of Science degree. Those selecting Options 2 or 3 will receive the Bachelor of Arts degree.

Transfer students should complete at least 10 credit hours of work in this department to qualify for graduation.

In order to graduate, a student must maintain an overall GPA of at least 2.0 with no hours of D credit in the major department.

Minor Requirements

Students who choose clothing and textiles as their minor field of study must have their programs approved by this department. They must complete 14 credit hours (5 at BYU), with at least one course in three of the following four areas:

Construction: CloTx. 165, 235, 265, 355, 520R.
Design and selection: CloTx. 110, 221, 300, 345, 350.
History and economics: CloTx. 330, 430, 472, 473, 474, 599R.
Textiles: CloTx. 260, 360, 490.

Options

Four options, aimed at providing background and training for particular professional opportunities, are included in the clothing and textiles major. These are: (1) fashion merchandising, (2) fashion design, (3) clothing and textiles and communications, and (4) general clothing and textiles.

Option 1—Fashion Merchandising

The course work offered in this area is designed to provide specialized training for those seeking positions such as buyer, assistant buyer, comparison shopper, fashion coordinator, and fashion promoter.

Required Courses
Clothing and Textiles
  110, 165, 260, 360, 472, 473, 474, 490
  Plus 8 hours of electives within the department.
Chemistry
  100 (3) Elementary College Chemistry
Physics
  177 (3) Physics of Light and Photography
Psychology or Sociology
  111 (3) General Psychology or Introductory Sociology
Economics
  110 (3) Economy, Society, and Public Policy
Communications
  101 (2) Introduction to Mass Communications
  102 (2) Introduction to Public Speaking
Accounting
  201 (3) Elementary Accounting
Business Management
  241 (3) Introduction to Marketing
  256 (3) Introduction to Retailing
Organizational Behavior
  321 (3) Fundamentals of Organizational Behavior

Approximately 32 credit hours are allowed for electives, which should include at least one course in each of the other departments within the College of Family Living. Of the 128 hours total, 40 hours must be upper-division credit.

Option 2—Fashion Design

The following program is planned for students interested in apparel or theatrical costume* designing:

Required Courses
Clothing and Textiles
  110, 165, 260, 265, 330, 345, 350, 355, 490
  Plus 5 hours of electives within the department
Chemistry
  100 (3) Elementary College Chemistry
Physics
  177 (3) Physics of Light and Photography
Two of the following three courses:
  Economics 110 (3) Economy, Society, and Public Policy
  Psychology 111 (3) General Psychology
  Sociology 111 (3) Introductory Sociology
Art and Design
  102 (2) Basic Design for Nonmajors
  103 (2) Drawing for Nonmajors
  106 (29 Crafts for Nonmajors
  Plus 7 hours of art electives
Interior Environment
  425 (3) Textiles for the Interior
Theatre and Cinematic Arts
  123 (3) Beginning Acting
  126R (2) Stage Makeup
  320 (3) Beginning Theatrical Design
  362 (2) Theatrical Costume Design
  Plus 6 hours of electives chosen from the following:
    319 (2) Beginning Technical Theatre: Construction and Painting
    361 (3) Directing Theory
    461 (3) Directing the One-Act Play
    562 (2) Advanced Costume Design for Stage and Screen

Select a combination of electives that will complete a total of 128 hours, including at least one course in each of the other departments within the College of Family Living.

*Those who are interested in theatrical costume designing should take theatre and cinematic arts classes.

Option 3—Clothing and Textiles and Communications

The following program is recommended for students who are interested in promotion areas, such as advertising, copy writing, and fashion reporting.

Required Courses
Clothing and Textiles
  110, 165, 260, 330, 360, 430, 472, 490
  Plus 7 hours of electives within the department
Art and Design
  311 or 312 (3) Survey of Art and Architecture
Chemistry
  100 (3) Elementary College Chemistry
Physics
  177 (3) Physics of Light and Photography
Two of the following three courses:
  Economics 110 (3) Economy, Society, and Public Policy
  Psychology 111 (3) General Psychology
  Sociology 111 (3) Introductory Sociology
Communications
  101 (2) Introduction to Mass Communications
  102 (2) Introduction to Public Speaking
  211 (3) News Writing
  230 (2) Introduction to Advertising
  255 (2) Introduction to Broadcasting
  332 (2) Advertising Media Planning and Budgeting
  334 (3) Retail Advertising
Industrial Education
  250 (3) Graphic Arts

Select a combination of electives that will complete a total of 128 hours, including at least one course in each of the departments within the College of Family Living.

Option 4—General Clothing and Textiles

The general clothing and textiles concentration provides training for such positions as consulting with commercial companies, teaching in stores and trade schools, extension services, and custom dressmaking.

Required Courses
Clothing and Textiles
  110, 165, 235, 260, 265, 300, 330, 345, 350, 355, 490
  Plus 6 hours of electives within the department
Chemistry
  100 (3) Elementary College Chemistry
Physics
  177 (3) Physics of Light and Photography
Two of the following three courses:
  Economics 110 (3) Economy, Society, and Public Policy
  Psychology 111 (3) General Psychology
  Sociology 111 (3) Introductory Sociology

Select a combination of electives that will complete a total of 128 hours, including at least one course in each of the other departments within the College of Family Living.

Courses

105. Elementary Clothing Construction. (1:1:2)
Unit method of clothing construction applied to simply designed cotton apparel. A service course for nonmajors with little or no sewing experience. Materials: approximately $15.00.

110. Selection and Care. (2:2:1)
Design elements related to apparel selection; principles of wardrobe planning, buying, and care; personal analysis for self-improvement.

135. Clothing Construction for Nonmajors. (2:1:0) Prerequisite: CloTx. 105 or equivalent experience.
Construction techniques for lightweight fabrics. Choice of project adapted to student's experience. Materials: approximately $25.00.

145. Flat Pattern Designing. (1:1:2) Prerequisite: previous experience in clothing construction.
Dress designing from a basic sloper.

221. Weaving. (2:1:3)
Creative design applied to weaving methods. Materials: $15.00 to $50.00.

235. Children's Clothing. (2:1:3) Prerequisite: CloTx. 135, 145, or equivalent experience.
Selection, design, and construction of children's clothing, related to child's developmental needs.

255. Fitting and Intermediate Construction. (3:2:4) Prerequisite: CloTx. 145.
Basic fitting of dresses and pants. Construction techniques for bulky and other challenging fabrics. Materials: approximately $50.00.

260. General Textiles. (3:3:1) Home Study also.
Natural and synthetic textile fibers, yarns, fabric construction, dyes, and finishes, with application to the purchase, use and performance of textile fabrics.

300. Clothing the Family. (2:2:0) Prerequisite: at least 3 hours in the social sciences or one class in CDFR.
Physical, social, and psychological needs related to clothing for family members at various age levels. Coordinating family resources to solve clothing problems.

330. History of Costume. (3:3:0)
Social, economic, and political influences on dress through the ages. Analyzing costume as an expression of life-style and as a basis for interpreting modern fashions.

345. Draping and Flat Pattern Design. (3:2:4) Prerequisite: CloTx. 110, 255, 260. Recommended: CloTx. 336.
Creative design, achieved through techniques of flat pattern and draping on an individualized dress form. Materials: $50.00 or more.

350. Apparel Design. (2:2:2) Prerequisites: CloTx. 336, 345.
Creative experiences in designing apparel for different production processes and price levels. Materials: $25.00 or more.

355. Tailoring. (3:3:0) Prerequisites: CloTx. 255, 260.
Custom and commercial tailoring techniques applied to construction of a coat and a suit. Materials: $75.00 or more.

360. Intermediate Textiles. (3:2:2) Prerequisites: CloTx. 260, Chem. 100 or equivalent.
Performance testing of textiles by standard test procedures.

365. Couture and Mass Production Techniques. (2:1:4) Prerequisites: CloTxx. 110, 145, 255.
Adapting apparel design and construction techniques to couture and mass production methods. Scheduled laboratory experience with Campus Couture.

430. Historic Textiles. (3:3:0) Prerequisite: CloTx. 260.
Developments in design and production of textiles as an expression of man's cultural achievements.

472. Fashion Industry. (2:2:0) Prerequisite: 9 hours in clothing and textiles. Recommended: Econ. 110.
Relation of fashion movement to manufacture and consumption of clothing. Garment production, fashion designers, fashion cycles, and trade organizations.

473. Clothing and Textiles Merchandising 1. (3:3:0) Prerequisite: CloTx. 260, 472; Acctg. 201; BusMgt. 241 or 256; Econ. 110.
Processes involved in planning and operating merchandising divisions in fashion retail stores.

474. Clothing and Textiles Merchandising 2. (2:2:0) Prerequisite: CloTx. 472. Recommended: CloTx. 110, 165, 300, 360.
Quality comparison of apparel, household textiles, and related merchandise available for retail selling. Aids in buying and selling.

490. Seminar. (1:1:0) Prerequisites: 12 credit hours in major and consent of instructor.
Special reports and readings in clothing and textiles.

520R. Workshop in Clothing and Textiles. (1-3:Arr.:Arr. ea) Prerequisite: consent of instructor.

595R. Special Topics in Clothing and Textiles. (1-3:Arr.:Arr.) Prerequisites: 15 semester hours in clothing and textiles and consent of instructor.

599R. Merchandising Internship. (4:Arr.:Arr. ea.) Prerequisites: CloTx. 110, 165, 260, 472, 473; Acctg. 201; BusMgt. 241, 256; Comms. 102; Econ. 110; OrgB 321; and consent of instructor.
Fifteen-week full-time work experience spent in fulfilling specific training assignments in a retail store. Recommended as an elective for students in Option 1.

Communications

Professors: Barney, G. Barrus, Bateman, Bradley, Burnett (Chairman, D-501 HFAC), Haroldsen, Rich, Smith, Stephan.
Associate Professors: Beckham, Fairbanks, Gibb, Mills, Peterson, Richardson, Whiting.
Assistant Professors: Anderson, W. Barrus, Christensen, Frost, Goodman, Hindmarsh, Johnson, Kagel, McKinlay, Porter, Tarbox, Wadsworth.
Instructor: Griffiths.
Special Instructors: Bickerton, Hampton, Monson, Searle, Sink, Stum, Walker, White.

Undergraduate Program

The program in communications provides each student with a foundation in the basic process of communication (personal and mass) and an understanding of the impact of the mass media in society. Students may specialize in areas ranging from interpersonal to mass communication with the curriculum organized to provide concentrations in advertising, broadcasting, film, journalism, photography, public relations/organizational communications, and speech communication. Related areas covered by particular concentrations include interpersonal communication, media sales, prelaw, and many others.

Students publish the campus laboratory newspaper, the *Daily Universe*; they produce on-the-air programs and news shows on KBYU-TV and KBYU-FM; they plan advertising campaigns for actual commercial clients, grapple with corporate-image problems of industrial firms, and shoot and process film for newspaper readers and movie and TV viewers.

A series of lectures on communications is sponsored throughout the year to bring students in contact with leading professionals and scholars in the field of communications. Professional activities are also stimulated by student organizations in advertising, journalism, broadcasting, public relations, and speech.

The department offers a variety of courses to help nonmajors develop communication skills, including Comms. 100 (Human Communication), Comms. 101 (Introduction to Mass Communication), Comms. 102 (Introduction to Public Speaking), and Comms. 301 (Introduction to Organizational Communication).

Philosophy and Objectives

The department's goals are to provide each student superior education and training in communication; to engage in significant research for the benefit of the Church, the community, and the profession; and to aid the media and other organizations in upgrading their performance. Since the fabric of modern society is held together by interpersonal and mass communication, effective communication contributes to the individual's general understanding and competence as well as to professional preparation for careers in mass communications, government, industry, business, law, and education. In every endeavor personal and public communication skills are useful and an understanding of the communication process is vital.

General Education

Students in communication are generally encouraged to emphasize social sciences, business, writing, and fine arts in their selection of general education and supporting courses. Comms. 100, 101, and 102 are departmental courses that prepare students in Category II of the general education program.

A statistics course is required of all students in the department with the exception of those in photography, journalism education, and speech education. This requirement may be met by taking Sociol. 205 or Stat. 211. During some semesters a special section of these courses may be available for communication majors.

Departmental Core Curriculum

Candidates for the degree of Bachelor of Arts in communication must complete a minimum of 32 hours of credit in the department. That minimum will be higher in some sequences. Included in those hours will be the following core curriculum:

Comms. 100 (3), 101 (2), 480 (3), 399R (1-4), for 9-12 hours

Each student, with the exception of those in speech or journalism education, must participate in a supervised professional experience under Comms. 399R. In most instances that will be an off-campus professional internship, but it may be a special professional experience supervised on campus by the student's faculty adviser.

In addition to the core, each student selects an area of concentration. That area of concentration specifies departmental courses to be taken as well as a program of supporting course work outside the department. This course work replaces an academic minor, except that the concentration in journalism education and speech education requires a teaching minor selected from the courses listed in the Education section of this catalog.

Requirements for a Minor in Communication

Those minoring in communication must complete a minimum of 16 credit hours selected from the core curriculum and one of the concentrations listed below. Comms. 101 and 211 are required of all minors in mass communications areas. The following requirements apply to those minoring in speech and interpersonal communication:

Interpersonal: Comms. 100, 102, 130, 305, and 6 hours of electives from 301, 310, 330, 403, 410
Speech: Comms. 100, 102, 130, 305, and 6 hours of electives from 311, 315, 401, 403, 492, 494
Speech Education: Comms. 100, 102, 111, 130, 305, 371, 401, 492 (speech education minors must be cleared through the coordinator of speech communication education)

BYU Forensic Organization

The speech communication area offers an opportunity for all students to participate in competitive speech activities on both the on-campus and intercollegiate levels. These activities are open to the general student body, regardless of major. Students have the opportunity to participate in about thirty debate trips during the academic year.

Advertising Concentration

Candidates must complete the departmental core plus a minimum of 28 hours in the advertising sequence core and area of emphasis.

Advertising Sequence Core: Comms. 211, 230, 255, 307, 332, 333, 338, and 339 (20 hours)

For the remaining 8 hours students have the option to propose any of the courses in one of the three areas that lead to career opportunities in advertising. These career areas and specific courses in each category must be selected with the approval of a faculty adviser prior to class registration. This is mandatory for the successful candidate in advertising. Areas and recommended courses are as follows:

Creative Comms. 305, 334, 335, 395, 403, 439, Engl. 218R (8 hours)
Media Sales: Comms. 305, 334, 335, 403, 434, 439, 444, 510 (8 hours)
Retail: Comms. 305, 334, 335, 403, 433, 439, 510 (8 hours)

Supporting Area Courses. In addition to the above, candidates in advertising must complete 17 hours of course work in supporting areas of communication. These courses must include—

BusMgt. 241 (3) Introduction to Marketing (for non-business majors)
BusMgt. 444 (3) Buying Behavior and Marketing Decisions (must be taken the semester immediately before Comms. 439 if 439 is selected)

In addition to the above two courses, advertising students must complete the balance of the 17 hours in supporting areas. These courses should be selected in consultation with a faculty adviser and must have his or her **prior** approval. Courses should represent a logical grouping from one or more departments that give support to the student's career goals. Possibilities include course work from art and design, accounting, computer science, English, economics, business management, organizational behavior, psychology, and sociology. It is also strongly recommended that Indus. 250 (Graphic Arts) be included in the supporting area.

Broadcasting Concentration

A student interested in broadcasting and film is required to complete the departmental core, the broadcasting sequence core, and one of the areas of concentration listed below. The number of hours required will depend upon the area of concentration. In addition, the student must take 10 hours of supporting area courses as noted below.

Broadcasting Sequence Core: Comms. 211, 230, 255, 307, ThCA 121 (McKinlay) (13 hours)

All the courses in the selected area of emphasis must be taken. Possibilities are—

Broadcast Management Sales: Comms. 312*, 333, 334, 346, 347, 434, 444, 449, 510 (24 hours)
Noncommercial Telecommunication: Comms. 272, 346, 347, 450, 456*, 510, 550; EdPsy. 555, 620 (19 hrs.)
Broadcast News: Comms. 272, 312*, 333, 340, 346, 420*, 449, 453, 510 (23 hours)
Broadcast Production: Comms. 272, 333, 346, 347, 449, 453, 456, 510, 556 (21-23 hours)
Film Production: Comms. 263, 272, 333, 346, 374, 375, 372*, 556 (21-23 hours)
Broadcast Talent Performance: Comms. 130, 272, 310, 312*, 330, 333, 346, 403, 453, 510 (23 hours)

*Courses require consultation with adviser.

Supporting Area Courses. Each student will also take 10 hours of supporting course work from outside the department. The selection of those courses is proposed by the student and approved by the adviser.

Film Concentration

For details of this program check with the Department of Communications.

Journalism Concentration

Candidates must complete 32 hours in communication, including 23 hours in the journalism sequence core and the selected area of emphasis.

Journalism Sequence Core: Comms. 211, 230, 255, 307, 312 (14 hours)

The following tracks are available to journalism students:

Broadcast Journalism: Comms. 272, 340, 346, 420 (9 hours)
Magazine Journalism: Comms. 323, 427, 528 (8 hours) plus at least 1 hour of electives in communication (Comms. 420 recommended)

Newspaper Journalism: Comms. 323, 420 (5 hours) plus at least 4 hours of electives
Comms. 521 is recommended as an elective in all three areas.

Supporting Area Courses. In addition to the above, candidates in journalism must complete 20 additional hours as follows:
9 hours from the social sciences in courses numbered 300 or above.
11 hours proposed by the student from one or from several fields

These courses should relate to the student's goals and represent a logical plan of study, and they must be approved by an adviser.

Journalism Education Concentration

This concentration is for students who wish to prepare for journalism teaching and student publication supervision in secondary schools. In addition to the teaching major in journalism, candidates must complete the teacher education courses prescribed for a secondary school teaching certificate and a teaching minor selected from the minors listed in the Education section of this catalog.

The teaching major in journalism totals 32 hours, including 23 hours beyond the departmental core to be taken as follows:

Journalism Sequence Core: 14 hours
Comms. 323, 420

Electives—5 hours chosen from among Comms. 263, 272, 335, 338, 340, 346, 347, 365, 427, 434, 450, 521, 528, 550, and ThCA 117R and 478R.

Students who wish to specialize in educational broadcasting should consult their departmental adviser for additional guidance.

Photography Concentration

Candidates must complete 36 hours in communication, including the departmental core and 27 additional hours.

Photography Sequence: Comms. 211, 230, 255, 263, 264, 272, 307, 365R, 366, 368R, 369R (26 hours) plus 1 hour of electives, with Comms. 374R or THCA 117R recommended

Supporting Area Courses. In addition to the above, candidates must complete the following related courses (12 hours):

Art and Design
  102 (3) Basic Design for Nonmajors
Industrial Education
  250 (3) Graphic Arts
Electives—6 hours chosen from among the following:
Business Management
  241 (3) Introduction to Marketing
Industrial Education
  453 (3) Photolithography
  454 (3) Photo-Screen Process Printing

Photographic Technician

Supervisor: W.Barrus

The two-year associate-degree program in photographic technology is designed to prepare technicians for service on the staffs of newspapers, magazines, industrial departments, and commercial and portrait studios. Training is provided in both camera and darkroom techniques for still photography, and supporting courses are offered in communications, cinematography, advertising, design, and graphic arts.

First Year	F	W
ArtDs. 102	3	
Comms. 263, 101	3	2
Indus. 250, 453	3	3
Comms. 264		3

Second Year	F	W
Indus. 351	3	
Comms. 368R, 365	3	2
Comms. 272		2
Comms. 307		3
Comms. 366, 369	2	2
Comms. 495R		2
ThCA 117R	2	

Public Relations/Organizational Communication Concentration

This is a new sequence that joins the strengths of public relations and organizational communication into a single program. Students will now be given the tools to operate in the important managemant functions of both internal and external communication in organizations. A student with this emphasis in communication would be employable in the traditional public relations areas, as well as in training, personnel, and management.

Besides the departmental core, students majoring in public relations/organizational communication must complete the following 34-hour core: Comms. 130, 211, 230, 225, 263, 301, 305, 307, 312, 335, 336, 435.

Supporting Area Courses. Students should also complete 15 hours of supporting area course work with at least 12 of those hours in upper-division credit. These courses should be selected on the basis of career goals. The proposed supporting area program must have the written approval of the faculty adviser. Suggestions for supporting area course work can be obtained from the college advisement center or the faculty adviser.

Speech and Interpersonal Communication Concentrations

Candidates must complete the departmental core, the sequence core, and one of the areas of concentration listed below. The number of hours required will depend upon the area of concentration. Major study in this area focuses on three tracks.

1. Interpersonal Communication—behavioral approaches in the study of human communication. Courses in this area stress theoretical concepts of human message systems in everyday living, with applications of these concepts to interpersonal, group, and organizational communication.

2. Speech Communication—rhetorical designs and strategies which facilitate change in social and public affairs. Courses aim to develop skill in the analysis, creation, and oral presentation of discourse as well as to examine the criticism and literature of public address.

3. Speech Communication Education—a composite of the interpersonal and the speech communication tracks for those students wishing to certify to teach on the secondary level.

Sequence Cores. Comms. 102, 111, 130, 305 (10 hours) One of the following tracks may be pursued:

Interpersonal Communication: Comms. 301, 310, 330, 403, 410, and at least 3 hours of electives (12 hours)
Speech Communication: Comms. 311, 315, 401, 403, 492, 494 (13 hours)
Speech Communication Education: Comms. 330, 371, 401, 403, 492, and 4 hours of electives from 301, 310, 311, 315, 410, 494 (16 hours)

Supporting Area Courses. In addition to the above, candidates in speech and interpersonal communication must complete 20 hours of elective courses from one or from several fields. These courses should relate to the student's goals and represent a logical plan of study, and they must be approved by an adviser.

A 20-hour approved minor in any field will also fill this requirement.

Graduate Program

Program. Master of Arts (M.A.).

Entrance Examination Required. Candidates must submit scores from Miller Analogies Test.

Application Consideration Dates. February 1, March 1, May 1, June 1, October 1, and November 1 each year.

Entry Times. Any regular registration.

Master of Arts

Prerequisites.

1. Candidate must have received B.A. or B.S. from an accredited institution with a 3.0 GPA or higher in the most recent 60 semester hours of course work.
2. If the candidate does not have an undergraduate major in communications or an adequate background in one of these areas of interest (communications research, mass communications, speech and interpersonal communication, communication education, or telecommunications), certain undergraduate courses will be required before the Master of Arts degree program is undertaken. This requirement must be met to the satisfaction of the candidate's advisory committee and the department graduate coordinator or chairman.
3. A background in statistics is desirable and a prerequisite course in that field will be required.
4. Professional experience in the area of communications is desirable and professional competence in written and spoken English is necessary.
5. Candidates must meet all Brigham Young University Graduate School requirements.

Field. Communications.

Requirements. Minimum of 24 semester hours plus thesis (6-hr. min.—699R). A nonthesis option is also available requiring 40 hours of course work and including a major written project.

Required Courses. Comms. 610 and 611 for mass communications students. Comms. 600 and 611, with 610 highly recommended, for speech communications students. Comms. 613 recommended for all.

Examinations. Written comprehensive and final oral examination required.

Candidates emphasizing mass communications must, if they select the nonthesis option, present an intensive professional experience as part of their program.

Students desiring to complete a graduate minor in communications should consult the department chairman or graduate coordinator regarding a recommended program of study.

Courses

100. Human Communication. (3:3:1) Home Study also. (G-HA)

Theory, philosophy, and practical applications of communicative principles relevant to interpersonal, small-group, and mass communication settings. Recommended for all who wish to communicate more effectively.

101. Introduction to Mass Communication. (2:2:0) Home Study also. (G-HA)

Media of mass communication and their functions in modern society: newspapers, magazines, motion pictures, radio and television, advertising, and public relations.

102. Introduction to Public Speaking. (2:2:1) Home Study also. (G-HA)

Improving public speaking skills: verbal ability, self-confidence, message structure, and audience adaptation.

111. Argumentation and Debate. (3:2:2) Home Study also.

Principles and practices.

130. Introduction to Interpersonal Communication Processes. (2:2:0)

Survey and application of intra- and interpersonal human communication.

211. News Writing. (3:2:3) Home Study also. Prerequisites: Engl. 115 or equivalent, score of 23 on English portion of ACT or comparable achievement on department qualifying test, ability to type 40 wpm.

Gathering, evaluating, and writing news for newspapers and broadcast media.

230. Introduction to Advertising. (2:2:1) Prerequisite: Comms. 211.

Advertising and its role in American economy; values to advertisers and media. Newspaper and broadcast advertising principles.

255. Introduction to Broadcasting. (2:2:1)

Role of radio and television in modern society and influences, current practices, and social implications of the American system of broadcasting.

263. Photography Foundation 1. (3:2:3)

Application of camera and darkroom techniques to communications and artistic expressions, emphasizing black-and-white photography.

264. Photography Foundation 2. (3:2:3) Prerequisites: ArtDs. 102, Comms. 263.

Color photography, emphasizing the basics of making color negatives and transparencies. Darkroom techniques in color printing.

272. Fundamentals of Motion-Picture Production. (2:0:4)

Production planning, story boards, motion-picture photography, and film editing. Laboratory projects using 8 mm equipment.

301. Introduction to Organizational Communications. (3:3:0) (G-HA) Prerequisite: Comms. 100, 102, or equivalent.

Analyzing communication in organizations with application techniques that enhance understanding.

305. Discussion and Conference Leadership. (3:3:1)

Analyzing and using human communication potentials for enlightenment, problem solving, leadership, self-actualization, and evaluation in small groups.

307. Communications Law. (3:3:0)

Legal rights, privileges, and regulations of press, radio, television, and films; libel, contempt, copyright, rights of privacy; decisions of regulatory bodies.

310. Interviewing and Listening. (2:2:0)

Theories and techniques of interviewing, emphasizing empathetic listening.

311. Advanced Argumentation and Debate. (2:2:0)

Applying reasoned discourses to argumentation and debate.

312. Reporting. (4:3:8) Prerequisite: Comms. 211.

News evaluation; interviewing; fact gathering; beat coverage of courts, government, education, labor, and business.

314R. Debate Techniques. (1:1:1 ea.)

Open to members of the forensics squad who obtain approval of the Communications Department and the debate council. Students must register for this course with at least two hours of instruction per week.

315. Social Rhetoric. (2:2:0)

Settings and strategies of rhetorical influence.

323. Editing. (3:2:6)

Copy editing, headline writing, page makeup, photo editing, and handling wire copy.

330. Paradigms of Interpersonal Communications. (3:3:0) Prerequisite: Comms. 130.

Contemporary theories, concepts, models, and empirical research relevant to interpersonal communicative processes.

332. Advertising Media Planning and Budgeting. (2:2:1) Prerequisite: Comms. 230.

Intensive study and practice in selecting advertising media for reaching specific and general audiences. How to best use the media for delivering advertising messages.

333. Broadcast Advertising. (3:3:1) Prerequisites: Comms. 230, 255.

Advertising principles for broadcast media; study of research, audience measurement. Writing commercials, programs, spot announcements; time buying, production, transcription, and film services.

334. Retail Advertising. (3:3:0) Lab included. Prerequisite: Comms. 230.
Planning and preparing advertising programs and layouts. Advertising philosophy of the retail marketplace.

335. Public Relations. (3:3:0) Home Study also. Prerequisite: Comms. 211 or consent of instructor.
Philosophy and practice in business, government, education, and other institutions. Study of publics, media, methods, press relations, and publicity.

336. Public Relations Case Studies. (3:3:0) Prerequisite: Comms. 335.
Cases selected from a wide range of actual public relations problems which have confronted business, government, education, and other institutions.

338. Advertising Copy and Layout. (3:3:1) Prerequisite: Comms. 333.

339. Promotion Management in the Media. (3:3:1) Prerequisite: Comms. 230.
Organization and functions of circulation departments in newspapers, magazines, and broadcasting stations; for those interested in management positions in media promotion.

340. Broadcast News. (3:2:4) Prerequisite: Comms. 272, 312.
Preparing and producing newscasts and public affairs programs. Interviews, documentaries, commentaries, editorials, and special events. Practical and laboratory experience provided.

346. Broadcast Television Production. (2:2:2) Prerequisite: Comms. 255 or qualifying examination.
Instruction and laboratory practice in planning, writing, editing, and producing television and radio programs.

347. Broadcast Management Problems and Practices. (2:2:2) Prerequisite: Comms. 346.
Contemporary problems and practices in commercial and noncommercial broadcasting through reading, independent research, and class discussion.

365R. Press Photography. (2:0:0 ea.) Prerequisites: Comms. 263, Physics 177 or equivalent.
Designing and producing single and multiple-picture sequences for newspapers, magazines, and other publications.

368. Advertising and Illustrative Photography. (2:1:3) Prerequisite: Comms. 264.
Black-and-white and color photography, using principles of layout and persuasive communication to design and produce advertising for all media.

368R. Pictorial Photography. (2:1:3 ea.) Prerequisite: Comms. 263 or equivalent.
Art composition applied to photography. Perfecting 35-mm and larger format techniques through creative projects of landscapes, still life, and recorded sound.

369R. Color Photography. (2:2:3 ea.) Prerequisite: ArtDs. 102, Comms. 263, 264.
Creative use of color in photography. Advanced techniques in color transparencies and color printing.

371. (Comms.-ThCA) Forensics Programming. (2:2:1) Prerequisite: ThCA 121 or consent of instructor.
Conducting and evaluating competitive speaking events.

372. Motion Picture Production Management. (2:1:2) Prerequisite: Comms. 272.
Planning and managing all production phases of motion picture or TV tape, including budgeting, scheduling, and coordination of all required resources.

373. Motion Picture and Television Sound. (2:1:2) Prerequisite: Comms. 272.
Motion picture and videotape sound production; selection and use of equipment, location and studio recording, and postproduction sound track preparation.

374R. Motion Picture Photography. (3:2:2 ea.) Prerequisites: Comms. 263, 272, and ThCA 117R.
Principles of 8mm and 16mm motion picture photography: composition, camera, film, and lens selection; exposure; and interior and exterior lighting techniques.

375R. Motion Picture Editing. (3:2:2 ea.) Prerequisites: Comms. 272 and ThCA 117R.
Selecting continuity and timing of motion-picture footage to tell a story. Introduction to sound editing. Technical procedures and 8mm and 16mm editing equipment.

377. (Comms.-ThCA) Secondary Teaching Curriculum and Methods. (3:3:1) Prerequisite: SecEd. 276.
Evaluation and preparation for student teaching: lectures, demonstrations, observations, pretesting, and development of methods and materials.

395R. (Comms.-ArtDs.) Creative Design. (3:3:0 ea.) (G-HA) Prerequisite: consent of instructor.
Introduction to the philosophies and methodologies of the creative design approach to solving problems, plus comprehensive experiences to develop the creative productivity of student thinking.

399R. Professional Communications Experience. (1-4:0:0 ea.) Prerequisite: junior standing and consent of sequence coordinator. Project approval required prior to registration.
On-the-job experience. Majors must take at least 1 hour of credit.

401. Advanced Speech Composition. (2:2:0) Prerequisite: Comms. 100 or 102.
Speech writing and oral presentation.

403. Persuasive Speech Communication. (2:2:0) Prerequisite: Comms. 100 or 102.
Psychology, principles, and techniques; applying these factors in communication.

410. Nonverbal Communication. (2:2:0)
Body language, proxemics, kinesics, and other nonverbal codes.

420. Depth Reporting. (2:2:0) Prerequisite: Comms. 312.
Techniques of modern investigative reporting for print and electronic media. Research, writing, and analysis of major public issues.

427. Magazine Writing. (3:3:0) Home Study also. Prerequisite: Comms. 211 or consent of instructor.
Analysis of nonfiction magazine markets and criticism of articles written in the course.

433. Retail Advertising Management. (3:0:0) Prerequisite: Comms. 334
Organizing the advertising department. Market research and advertising campaigns.

434. Newspaper Advertising Management. (2:2:0) Prerequisites: Comms. 230, 338.
Organizing the advertising staff, servicing of local and national accounts, display and classified rate structures, advertising sales, promotion, and research.

435. Professional Seminar in Public Relations/Organizational Communication. (3:3:0) Prerequisite: Comms. 336.
Applying communication principles to internal and external publics; fact finding, planning, and evaluating social interrelationships.

439. Advertising Media and Campaigns. (3:3:0) Prerequisites: Comms. 333 and 338.
Researching and planning advertising campaigns related to national and local objectives; media selection and budgeting, individual project in production of an advertising campaign.

444. Broadcast Sales Administration. (3:3:0) Prerequisites: Comms. 230, 255, 333.
Understanding the complex interrelationships involved in the sales administration of a broadcast facility.

449. Broadcast Programs and Audiences. (3:3:0) Prerequisites: Comms. 346, 347.

Basic program forms used in radio and television, effective program structure and appeals, audience research and measurement.

450. Noncommercial Telecommunication Systems. (2:2:0) Prerequisite: senior standing.
Examining and developing noncommercial nonmass-media telecommunication systems. Use and impact in training, instructional systems, and program distribution.

453. Broadcast Announcing. (2:1:3) Prerequisites: Comms. 255 and ThCA 121 (section for broadcasters).
Laboratory and broadcast experience in presenting major types of radio and television announcing materials.

456. Television Operations and Directing. (3:3:3) Prerequisite: Comms. 346. Recommended: ThCA 460R.
Theories and techniques.

479. (Comms.-ThCA) Secondary Student Teaching. (4-8:1:20-80) Prerequisites: Comms.-ThCA 377 and completion of two-thirds of courses required for teaching major and minor or composite major.
Required for teaching major and minor a composite major. For course description and fees, check with Teacher Clearance Office.

480. Senior Seminar. (3:3:0) Prerequisites: Comms. 100, 101, and senior standing.
Contemporary practices, ethics, and problems of communication in a social and business setting; introduction to communications research.

492. Rhetoric. (3:3:0)
Ancient and contemporary rhetoric applied to education. Required of majors seeking secondary education certification.

494. Great Speeches, Speakers, and Issues. (2:2:0)
Analysis and evaluation of historical and contemporary public address.

495R. Projects in Communication Practice. (1-2:0:0 ea.) Prerequisites: senior standing and consent of department chairman.
Independent research projects and readings for communications majors. Projects must be approved in advance of registration.

501. History of Mass Communications. (2:2:0)
Print, film, and broadcast communication media from their beginnings to the present, and their roles as institutions in American society.

510. Mass Media Administration. (2:2:0) Prerequisite: Comms. 312, 439, 449.
Organizing and administering newspapers, magazines, radio stations, and television stations.

521. Opinion Writing. (2:2:0) Prerequisite: Comms. 312 or consent of instructor.
Opinion function of the mass media in editorials, columns, commentaries, and reviews.

528. Magazine Editing and Publishing. (2:2:0) Prerequisite: Comms. 312.
Layout and design for magazines and business publications. Contemporary practices in content and production.

550. Instructional Telecommunication Production. (2:2:2) Prerequisite: consent of instructor.
Producing modules and units of predesigned instructional packages.

556. Advanced Program Development and Production. (2-4:1:3-6) Prerequisite: consent of instructor.
Broadcasting and film production, observing professional standards.

580. Comparative World Communication Systems. (2:2:0)
Mass media systems in developing, authoritarian, and free nations and their relationship to government.

581. International Communication Problems. (2:2:0)
Cultural, physical, and governmental barriers to information flow between nations; role of the press in foreign policy; and international propaganda.

590. Selected Readings and Projects. (1-2:0:0)
Independent research and study outside of usual thesis work.

600. Speech Communication as a Profession. (3:3:0)
The literature and the profession of speech communication.

601. Psychology of Speech Communication. (2:2:0) Prerequisite: Comms. 100, 401, or 403.
Psychological elements in speech, language, and communication behavior.

610. Studies in Communication Theory. (3:3:0) Prerequisite: Comms. 100; one or more courses in philosophy, psychology, and sociology.
Historical and philosophical development of communications theory, applied to problems of the mass media.

611. Research Methods in Communication. (3:3:0) Prerequisites: Stat. 221, Psych. 373 or Sociol. 606 or equivalent.
Includes readership, readability, and audience measurement. Introduction to thesis writing.

613. Literature of Communications. (2:2:0) Prerequisite: Comms. 610.
Literature that contributes to the understanding and functioning of all communications processes.

614. Organizational Communication. (2:2:0)
Theory and research of intraorganizational communication problems.

615. Propaganda, Public Opinion, and Communications. (3:3:0)
Roles of the mass media as channels of propaganda and influences upon public opinion. Effects of public opinion on mass communications.

617. Mass Communications and Government. (3:3:0) Prerequisite: Comms. 307 or PolSci. 361 or 363.
Contemporary relationship between government and the mass media, considering the philosophical and historical basis for regulation in light of constitutional guarantees.

620. Instructional Telecommunication Design. (2:2:0) Prerequisite: consent of instructor.
Design, implementation, and evaluation of instructional telecommunication packages.

621. Rhetorical Theory. (2:2:0)
History and development of the rhetorical principles in the classical world, analyzing the works of Socrates, Plato, Aristotle, Cicero, Quintilian, and others.

623. American Public Address. (2:2:0)
Significant speakers and speeches and their relationships to American political, social, and intellectual life. From colonial times to the mid-twentieth century.

624. Contemporary Public Address. (2:2:0)
Significant speakers and speeches in post-World War II society, emphasizing contemporary modes of communication and trends in rhetorical analysis.

625. Small-Group and Dyadic Communication. (2:2:0)

626. Argumentation and Advocacy. (2:2:0)
Argumentation applied to inquiry into and advocacy of social issues.

690. Seminar in Mass Communications. (1:1:0)

691R. Special Studies in Communications. (1-3:Arr.:Arr. ea.)
Individual work on approved problems not leading to a thesis. Projects must be approved before registration.

692R. Internship in Communications. (1-5:1-5:0 ea.) Prerequisites: Comms. 600, 690. Limited to 5 hours of total credit.

693. Theory of Persuasion. (2:2:0)
The role of ancient and modern persuasive concepts

in forming, controlling, and/or changing opinions of individuals or groups.

699R. Thesis for Master's Degree. (6-9:Arr.:Arr. ea.)

Computer Science

Professors: Carlson, Dean.
Associate Professors: Ashton, Beus, Burton, Call, Crandall, Gardner, Hays, Norman (Chairman, 222 TMCB).
Assistant Professors: Stokes, Wright.

Undergraduate Program

The Computer Science Department offers programs of study leading to the Bachelor of Science and the Master of Science degrees. The objective of these programs is to train computer professionals qualified to contribute successfully in any of the areas of computer science.

A computer professional is prepared to deal with problems in the design and implementation of modern computer and information systems. This implies a broad knowledge of the techniques available in the field and the skills to apply these in individual situations. The computer science program provides training in these skills through a graded series of courses ranging from basic computer concepts to advanced developments in compilers, assemblers, machine organization, operating systems, and other areas.

For those who wish to minor in computer science, there are several alternatives available, depending on the student's major field. In addition, service courses are offered to meet the needs of students from other departments.

Students contemplating eventual doctoral graduate work in computer science are encouraged to obtain a strong mathematical background, including Math. 371 and 372.

Requirements for a Major

A bachelor's degree candidate majoring in computer science is required to complete the following core courses with a grade of C or better:

ComSci. 132, 220, 232, 330, 351, 380, 391R (twice), 420, 431, 440, 506.
Math. 112, 113.
Stat. 321.
Engl. 316.

In addition, four courses must be selected from the elective courses listed below, including two from computer science and one from mathematics.

ComSci. 224, 231, 432, 436, 451, or any 500-level computer science course.
Psych. 570.
Math. 343, 371, 372, 411, 508, 512.
Other—ComSci. 233; Stat. 241, 433, 434

Sample Course Sequence for Majors

First Year	**F**	**W**	**Sp/Su**
Math. 112, 113	4	4	
ComSci. 132, 232, 220	3	3	3

Second Year	**F**	**W**	**Sp/Su**
ComSci. 351, 380, 330	3	3	3
ComSci. 420		3	
Stat. 321	3		
Major elective		3	
Engl. 316	3		

Third Year	**F**	**W**	**Sp/Su**
ComSci. 431, 440	6		
ComSci. 505		2	
ComSci. 391R	½	½	
Major elective	3		
Mathematics electives		3	

Requirements for a Minor

The department adheres to the University requirement of 14 semester hours of course work. The specific courses that are to be used must be approved by the department. Following are three sample sets of courses that are approved.

1. ComSci. 132, 220, 232, 330, 351
2. ComSci. 131, 231, (220 or 232), 330, 351
3. ComSci. 133(A,B), 233, (220 or 232), 330, 351

Many other combinations may be approved after discussion with an adviser from the department.

Graduate Program

Program. Master of Science (M.S.).

Entrance Examination Required. Graduate Record Examination.

Application Consideration Dates. Same as Graduate School deadlines.

Entry Times. Any regular registration.

Master of Science

Prerequisites. A bachelor's degree in computer science or equivalent course work in related undergraduate programs.

Field. Computer science.

Requirements. Minimum of 24 semester hours plus thesis (6 semester hours).

Required Courses. None (no graduate credit is given for courses numbered less than 400).

Examination. Degree-seeking candidates must pass a written and/or oral examination covering their graduate studies.

Courses

105. Computers and Their Use. (2:2:0)
A nonprogramming introduction to the use of computers in society.

120. Introduction to Computer Organization. (2:2:1)
Elementary information representation, logic design, and computer organization for computer science majors.

122. Introduction to Computer Programming. (2:2:1)
Algorithm formulation and high-level programming for computer science majors.

130. Computers and Programming. (2:2:1) (G-ML) Prerequisite: Math. 100E or equivalent.
Computer programming for beginners.

131. Scientific Computing 1. (3:3:2) (G-ML) Prerequisite: Math. 100E or equivalent.
Computer programming for engineering and science students.

133A. Business Computing 1. (2:4:1) (G-ML) Prerequisite: Math. 110.
Computer organization and programming emphasizing business applications. Taught in an eight-week term or block.

133B. Business Computing 2. (1:2:1) (G-ML) Prerequisite: Math. 110.
Continuation of ComSci. 133A. Taught in an eight-week term or block.

220. (ComSci.—ElecEng.) Digital Computer Electronics. (3:2:3) Prerequisites: Physics 122 or ComSci. 132 or ElecEng. 120.
Basic elements and technologies used to make digital computers; laboratory experience in constructing simple computer subsystems.

224. (ComSci.—ElecEng.) Digital Computer Sequential Circuits Design. (3:2:3) Prerequisite: ComSci. 220.
Asynchronous and synchronous sequential circuit analysis and synthesis, including flip-flop excitation functions, state assignments, and race conditions.

231. Scientific Computing 2. (3:3:2) Prerequisite: ComSci. 131 or equivalent.

Data handling, file handling, structured programming, and mathematical applications.

232. Computer Organization and Programming. (3:3:2) Prerequisite: ComSci. 120 and 122
Continuation of ComSci 120 and 122.

233. Programming Commercial Applications in COBOL. (3:3:2) Prerequisite: ComSci. 133 or 330.
Computer applications in business using the COBOL programming language; data management, sorting, and file maintenance.

300. Programming Systems Survey. (3:3:0) Prerequisites: ComSci. 131, 132, or 133.
Overview of programming techniques, data structures, languages, and operating systems.

330. Programming Languages. (3:3:0) Prerequisite: programming experience using high-level language.
Principles and concepts characterizing high-level computer-programming languages.

351. Information Structures. (3:3:1) Prerequisite: ComSci. 232.
Computer representation of information—its structure and logical organization for optimum computer processing.

380. Computer Architecture. (3:3:0) Prerequisites: ComSci. 220 and 232.
Includes memory and addressing, arithmetic schemes, data channels, order codes, microprogramming, and multiprocessors.

391R. Seminar in Computer Science Topics. (½:2:0 ea.) Prerequisite: ComSci. 330 or 351.
A participation seminar with final examination. Reports taken from current developments in the computer field.

420. Operating Systems Principles. (3:3:0) Prerequisites: ComSci. 330 and 380.
Principles underlying the design and implementation of computer operating systems.

431. Algorithmic Languages and Compilers. (3:3:0) Prerequisites: ComSci. 330 and 351.
Formal description of algorithmic languages and the techniques used in their compilation: semantics, ambiguities, procedures, replication, iteration, and recursion.

432. Assemblers. (3:3:1) Prerequisite: ComSci. 351.
Implementation and use of advanced assembly language features; macro processors and software portability.

436. List and String Processing. (3:3:1) Prerequisite: ComSci. 351.
Techniques, languages (SNOBOL, LISP, etc.), and applications (computational linguistics, formula manipulation, text processing, artificial intelligence).

440. Operating Systems Design. (3:3:0) Prerequisite: ComSci. 420.
Pragmatic aspects of computer operating systems implementation.

451. Information Systems Analysis. (3:3:2) Prerequisite: ComSci. 233 or 330. Recommended: ComSci. 351.
Techniques of analysis from the viewpoint of computer implementation.

501R. Advanced Topics in Computer Science. (1-3:Arr.:Arr. ea.) Prerequisite: consent of instructor.
Recent developments in computer science.

505. Computers and Society. (3:3:0)
Discussion, reading, and written composition dealing with the effects of current and future computer usage upon society.

510. Formal Languages and Syntactic Analysis. (3:3:0) Prerequisite: ComSci. 431 or consent of instructor.
Definition of formal grammars and algorithms for syntactic analysis.

531. Compiler Theory and Design. (3:3:0) Prerequisites: ComSci. 431 and 432.
Theory and design of compilers and interpreters, including syntax-directed compilers and metacompilers.

551. Data-Based Computer Systems. (3:3:0) Prerequisite: ComSci. 351.
Data bases and data-base management, including design and evaluation, retrieval languages and systems, information-structuring techniques, and data integrity.

552. Computer Center Management and Performance Measurement. (3:3:2) Prerequisite: senior or graduate standing in computer science.
Using hard and software monitors in systems improvement and future design. Implications for computer center management.

555. Computer Graphics. (3:2:1) Prerequisite: ComSci. 431 or consent of instructor.
Current techniques, including interactive graphics, graphics system design, and two- and three-dimensional picture drawing and display processors.

561. Theoretical Foundations of Computer Science. (3:3:0) Prerequisite: Math. 210 or consent of instructor.
Formal languages, automata theory, sequential machines, computability and undecidability, and graph theory.

☐ **Psychology 570. Computer Use in the Behavioral Sciences.** (3:3:6)

571. Discrete Systems Simulation. (3:3:1) Prerequisites: Psych. 570 or ComSci. 231 or 330, Stat. 321.
Computer simulation utilizing logical, numerical, and Monte Carlo models. Collecting and evaluating statistics on passage times, flow volume, queue lengths, manpower, and equipment utilization.

572. Artificial Intelligence and Heuristic Programming. (3:3:0) Prerequisites: ComSci. 231 or 330, Stat. 221 or 321.
Heuristic vs. algorithmic methods; description of cognitive processes; approaches to mathematical invention. Research in theorem proving, game playing, simulation of cognitive processes, etc.

581. Advanced Computer Architecture. (3:3:3) Prerequisite: ComSci. 380. Recommended: ComSci. 224.
Synthesizing innovative and relevant machine organizations.

598R. Special Projects. (1-3:1:0) Prerequisites: ComSci. 351 and consent of instructor.

699R. Thesis for Master's Degree. (Arr.) Prerequisite: consent of committee chairman.

Economics

Professors: Bateman, Clark (Chairman, 335 KMHW), Davies, Doxey, Nelson, Wimmer.
Associate Professors: Dutton, Koller, McDonald, Oveson, Parsons, Pope, Pritchett, Rickenbach.
Assistant Professors: Crawford, Heiner, Israelsen, Kearl, Nanto.

Undergraduate Program

Undergraduate training in economics provides excellent preparation for entrance into many graduate programs or professional careers. A minimum of designated courses is required, allowing students considerable flexibility in developing a curriculum consistent with their professional goals.

The following areas are most popular among students graduating with a major in economics:

1. The study of law
2. Graduate study in business—MBA, DBA, or Ph.D. in business or M.A. in organizational behavior
3. Graduate study in economics—either M.S. or Ph.D.
4. Graduate study in allied fields—Asian studies, Latin American studies, urban studies, public administration, etc.

5. Employment in business or labor relations
6. Career in government service
7. Teaching economics in secondary schools

General Information for Majors

The Bachelor of Arts degree in economics is offered in both the College of Business and the College of Social Sciences. Specific requirements in each college are outlined below.

It is recommended that after completing Econ. 110, a student enroll in a 300-level field course in economics while completing the mathematics and statistics requirements. It is then recommended that a student take Econ. 410, 411, and 487 or 488 as soon as possible. After completing Econ. 410 and 411, students are encouraged to take the remainder of their field courses at the 500 level. Students may not take 300-level and 500-level field courses in the same area (e.g., 374 and 574) without permission from the department chairman. Econ. 510, 511, and 588 are strongly recommended for those contemplating graduate work in either economics or business. The department allows a maximum of 3 hours of D credit in courses used to fulfill the major requirements.

Advisement

The faculty are anxious to consult with majors as well as students contemplating economics as a major. Routine questions should be directed to the appropriate college advisement center, but general questions regarding curriculum and career decisions should be directed to the faculty.

Requirements for a Major in the College of Business

Students majoring in the College of Business must take at least 27 semester hours in economics. The following courses are required: Econ. 110, 410, 411, 315 or 515, 487 or 488. At least 9 of the total hours in economics must be at the 500 level.

Students majoring in economics in the College of Business should take the following business core courses as soon as possible: Econ. 110, Math. 112 or 141, Acctg. 201 and 202, ComSci. 133A or a quickie course in FORTRAN, and Stat. 321 (Stat. 321 is recommended) or 221 (for 4 hours). Students receiving less than a B- in Econ. 110 must take Econ. 212 before enrolling in Econ. 410 or 411.

Students majoring in the College of Business are required to take one course from each of the following areas A through C to complete the business core requirement;

Area A	Area B	Area C
*Econ. 353	BusMgt. 341	OrgB 321
*Econ. 553	BusMgt. 361	BusMgt. 499
BusMgt. 301		BusEd. 305

*If Econ. 353 or 553 is used to satisfy the core requirement, it cannot be counted in the 11 elective hours.

We recommend that students take Engl. 315 or BusEd. 320R.

Requirements for a Major in the College of Social Sciences

Students majoring in the College of Social Sciences must take at least 30 semester hours in economics. The following courses are required: Econ. 110, 410, 411, 315 or 515, 487 or 488. At least 9 of the total hours in economics must be at the 500 level.

Students majoring in economics in the College of Social Sciences should take the following courses as soon as possible: Econ. 110, Math. 112 or 141, Stat. 321 (Stat. 321 is recommended) or 221 (for 4 hours). Students receiving less than a B- in Econ. 110 must take Econ. 212 before enrolling in Econ. 410 or 411.

We recommend that students take the following courses: Acctg. 201, ComSci. 133A or a quickie course in FORTRAN, and Engl. 315

Requirements for an Economics Minor

Students selecting economics as a minor subject must take Econ. 110, 300 or 410, 301 or 411, and 6 additional hours in economics above 301.

Graduate Program

Program. Master of Science (M.S.), Master of Arts (M.A.).

Entrance Examination Required. Graduate Record Examination (GRE) with advanced examination in economics. International students from non-English-speaking countries must take the TOEFL or Michigan tests in English. Students may be required to take special placement examinations in the prerequisite subject matter areas.

Application Consideration Dates. Same as Graduate School deadlines.

Entry Times. Any regular registration.

Prerequisites. 6 semester hours of intermediate economic theory, 3 semester hours in principles of statistics, and an introductory calculus course—or equivalent proficiency in these subjects as demonstrated by appropriate examination (D credit is not considered acceptable); English proficiency.

There are five master's programs. All require Econ. 510 and 511. Further details on these programs may be obtained from the Economics Department graduate coordinator.

Program 1—Ph.D. Preparation. Minors permissible: Option 2 only; requirements: 33 semester hours, major research paper, final examinations.

Program 2—Managerial Economics. Minors permissible: Option 2 only; requirements: 30 semester hours, major industry/public sector study, final examinations.

Program 3—Two-Year College Teaching. Minors permissible: normally a continuation of undergraduate major or minor, Option 2; requirements: 35 semester hours (including a junior college or secondary teaching certificate), major research paper, final examinations.

Program 4—Area Studies: Asian or Latin American. Requirements: 15 semester hours in economics, 15 semester hours in area studies, joint thesis, and final examinations.

Program 5—General Degree. Minors permissible: Option 1 or Option 2; requirements: 24 semester hours plus thesis, final examinations.

Courses

110. Economy, Society, and Public Policy. (3:3:0) Home Study also. (G-SS)

Strengths and weaknesses of the market system and the role of government in solving basic social problems such as unemployment, poverty, inflation, economic growth, and the environment.

212. Economics of the Market System. (3:3:0) Home Study also. (G-SS) Prerequisites: completion of or concurrent registration in Econ. 110 and Math. 110 or equivalent.

Price determination and income distribution through examining the behavior of the household, business, and government sectors of the economy.

300. Microeconomics for Business Decisions. (3:3:0) (G-SS) Prerequisites: Econ. 110 or equivalent (with a C or better) or Econ. 110 and 212, and Acctg. 232A or equivalent.

Microeconomic principles related to business decisions.

301. Macroeconomics for Business Decisions. (3:3:0) (G-SS) Prerequisite: completion of or concurrent registration in Econ. 300.

Macroeconomic principles analyzing the business environment and forecasting changes in aggregate economic relationships.

315. History of Economic Thought. (3:3:0) (G-SS) Prerequisite: Econ. 110 or equivalent.

330. Economic Development. (3:3:0) (G-SS) Prerequisite: Econ. 110 or equivalent.
Introduction to the problems and processes of economic growth and development, emphasizing less-developed nations.

331. Economics of the Soviet Union and Eastern Europe. (3:3:0) Prerequisite: Econ. 110 or equivalent.
Socialist economies of the USSR and Eastern Europe, emphasizing problems associated with central planning such as incentives, efficiency, and growth.

332. Economics of Asia. (3:3:0) Prerequisite: Econ. 110 or equivalent.
Economics of Japan, China, and other East and South Asian countries, emphasizing problems of development, trade, government policies, population, and agriculture.

334. Economics of Western Europe. (3:3:0) Prerequisite: Econ. 110 or equivalent.
Historical development of Europe's economic institutions and their effects on the general history of that continent.

341. Economics of Capitalism, Socialism, and Communism. (3:3:0) (G-SS) Prerequisite: Econ. 110 or equivalent.
Using economic models and applying economic principles to analyze capitalism, market socialism, and central planning systems.

345. Energy and Environment. (3:3:0)
Economic principles, problems, and institutions associated with energy development, use, and conservation.

352. Real Estate and Urban Analysis. (4:4:0) (G-SS) Prerequisite: Econ. 110 or equivalent.
Principles and problems associated with real estate decisions as they relate to economic trends, marketing, financing, and investments.

353. Money and Banking. (3:3:0) (G-SS) Prerequisite: Econ. 110 or equivalent.
Principles related to monetary and banking theory and policy.

☐ **Agricultural Economics 355. Rural Development Economics.** (3:3:0) (G-SS)

358. International Trade and Finance. (3:3:0) (G-SS) Prerequisite: Econ. 110 or equivalent.
Theory and institutions of international trade and finance, applications to the United States.

361. Labor Economics. (3:3:0) (G-SS) Prerequisite: Econ. 110 or equivalent.
Economic principles, problems, and institutions involving labor unions and collective bargaining.

362. Manpower Economics. (3:3:0) (G-SS) Prerequisite: Econ. 110 or equivalent.
Barriers to optimal utilization of manpower and programs to remove such barriers.

374. Economic History of the United States. (3:3:0) (G-SS) Prerequisite: Econ. 110 or equivalent.
Review of American economic growth, emphasizing such topics as slavery, transportation, monopolies, the role of government, and the Civil War.

375. Public Choice in a Market Economy. (3:3:0) (G-SS) Prerequisite: Econ. 110 or equivalent.
Economics of decision making in the public sector, including cost-benefit analysis and the efficiency-equity issues of taxation and expenditure policies.

390. (Econ.-AgEcon.) Natural Resource Economics. (3:3:0) (G-SS)
Economic principles underlying utilization and conservation of natural resources.

410. Theory of Price. (3:3:0) (G-SS) Prerequisites: Econ. 110 or equivalent (with a B or better) or Econ. 110 and 212; completion of or concurrent registration in Math. 112 or 141.
Intermediate economic theory, emphasizing price and distribution analysis.

411. Theory of Income, Employment, and the Price Level. (3:3:0) (G-SS) Prerequisites: Econ. 110 or equivalent (with a B or better) or Econ. 110 and 212; completion of or concurrent registration in Econ. 300 or 410.
Intermediate economic theory emphasizing national income analysis.

486. Mathematical Economics (3:0:0) (G-SS) Prerequisites: Econ. 410 and completion of or concurrent registration in Econ. 411.
Linear algebra and calculus applied to the analysis of production, consumer choice, market equilibrium, and national income models.

487. Quantitative Methods in Economics. (3:3:0) (G-SS) Prerequisites: Math. 112 or 141, Stat. 221 or 321, Econ. 300 or 410, and completion of or concurrent registration in Econ. 301 or 411.
Introduction to quantitative methods for empirically testing economic theory in forming policy and evaluating economic alternatives.

488. Introduction to Econometrics. (3:3:0) (G-SS) Prerequisites: Math. 112 or 141, Stat. 321 or equivalent, Econ. 300 or 410, and completion of or concurrent registration in Econ. 301 or 411.
Mathematical and statistical techniques used to estimate and test hypotheses associated with quantifiable economic relationships.

501R. Current Economic Policies and Problems. (2-3:Arr.:Arr. ea.) Prerequisite: Econ. 410 or consent of instructor.

510. Advanced Price Theory. (3:3:0) (G-SS) Prerequisite: Econ. 410.

511. Advanced Theory of Income, Employment, and the Price Level. (3:3:0) Prerequisites: Econ. 410 and 411.

513R. Topics in Advanced Economic Theory. (2-5:Arr.:Arr. ea.) Prerequisite: consent of instructor.

515. Advanced History of Economic Thought. (3:3:0) Prerequisites: Econ. 410 and 411 or consent of instructor.

530. Advanced Economic Development. (3:3:0) Prerequisites: Econ. 410 and 411 or consent of instructor.

531. Economic Problems of the Soviet Union and Eastern Europe. (3:3:0) Prerequisites: Econ. 410 and 411 or consent of instructor.

532. Economic Problems of Asia. (3:3:0) Prerequisites: Econ. 410 and 411 or consent of instructor.

534. Economic Problems of Western Europe. (3:3:0) Prerequisites: Econ. 410 and 411 or consent of instructor.

541. Advanced Comparative Economics Systems. (3:3:0) Prerequisites: Econ. 410 and 411 or consent of instructor.

552. Urban Economics, Theory Problems, and Policies. (3:3:0) Prerequisite: Econ. 110 or equivalent.

553. Theory of Money and Banking. (3:3:0) Prerequisites: Econ. 410 and 411 or 300 and 301 or consent of instructor.

558. Theory of International Trade and Finance. (3:3:0) Prerequisites: Econ. 410 and 411 or 300 and 301 or consent of instructor.

563. Economics of the Labor Market. (3:3:0) Prerequisites: Econ. 410 and 411 or 300 and 301 or consent of instructor.

574. American Economic Development. (3:3:0) Prerequisites: Econ. 410 and 411 or 300 and 301 or consent of instructor.

575. Theory of Public Finance. (3:3:0) Prerequisites: Econ. 410 and 411 or 300 and 301.

576. Industrial Organization and Public Policy. (3:3:0) Prerequisite: Econ. 410 or consent of instructor.
Impact of industrial concentration (oligopoly) on technological progress, wage-price stability, and economic efficiency.

588. Econometrics. (3:3:0) Prerequisites: Econ. 410, 411, and 488.

589R. Advanced Mathematical Economics. (3-6:Arr.:Arr. ea.) Prerequisites: Econ. 410 and 411; Math. 112 or 141.

594R. Seminars in Selected Economic Topics. (1-6:0:0 ea.) (G-SS) Prerequisite: consent of instructor.
Seminars will cover a variety of topics in economic policy and theory.

595R. Lectures in Economics. (1-3:Arr.:Arr. ea.) Prerequisite: Econ. 110 or equivalent or consent of instructor.

596R. Readings in Economics. (1-3:Arr.:Arr. ea.) (G-SS)

597R. Research in Economics. (1-3:Arr.:Arr. ea.)

599. Senior Paper. (1:0:0)

☐ **MBA 610. Advanced Managerial Economics.** (3:3:0)

☐ **MBA 611. Industry Structure and Price 2.** (2:2:0)

☐ **MBA 612. Econometric Analysis for Managers.** (4:4:0)

☐ **MBA 613. Industrial and Macro Environment.** (3:3:0)

664. Advanced Collective Bargaining. (2-3:2:0) Prerequisite: consent of instructor.

688. Applied Econometrics. (3:3:0) Prerequisites: Econ. 300 or 410 and 301 or 411, or MBA 510 and 511.

699R. Thesis for Master's Degree. (6-9:Arr.:Arr. ea.)

Education

The following departments are included in the College of Education:

Educational Administration
Educational Psychology
Elementary Education
Instructional Science
Secondary Education and Foundations

Undergraduate Program

The undergraduate program in education is organized to develop effective and capable teachers. Courses sponsored by the College of Education are designed to help students understand children, organize materials, and acquire the knowledge, skills, and attitudes necessary for effective teaching. The department trains in three areas: special education, elementary education, and secondary education.

To be eligible for teacher education sequence courses, a student must have either a BYU cumulative grade-point average, with no fewer than 32 semester hours completed, of 2.25 or higher or a total college cumulative grade-point average of 2.25 or higher. Elementary education requires a minimum grade-point average of 2.5 with no fewer than 15 semester hours completed. The student must also satisfy a grammar and spelling requirement by passing a test which is administered by the Testing Service or qualify by verifying a score of 20 or higher on the English section of the American College Test. In addition to the above, special education majors must make a separate application for admission to special education.

Students are required to obtain a Certificate of Admissions card by clearing through the Teacher Clearance Office when the above prerequisites are met. This must be done prior to registration. TCO clearance is also required for certain other professional sequence courses as noted in the catalog.

The College of Education is organized to offer courses for all persons engaged in professional education and service courses to graduate students in other disciplines.

Programs are designed to give special training to school administrators, school business managers, supervisors, curriculum directors, educational psychologists, specialists in counseling and guidance, reading specialists, communication/learning disability specialists, and teachers, administrators, and supervisors of special education. Such programs are at once intensive and broad in scope. They are designed to give the depth and breadth needed by specialists in education.

Graduate Program

The college offers graduate degrees at both the master's, educational specialist, and doctoral levels. The Master of Arts, the Master of Education, and the Educational Specialist degrees are offered. In addition, both the Doctor of Education and the Doctor of Philosophy may be obtained through this college.

Department of Educational Administration

Professors: Cottrell, Heaton, Hyatt, Oakes, Ovard, Smith, Van Alfen.
Associate Professors: Hungerford, Rogers, Stephens, Wasden (Chairman, 207 MCKB).

The Department of Educational Administration is a graduate department in the College of Education offering programs leading to the Master of Education (M.Ed.), Educational Specialist (Ed.S.), and Doctor of Education (Ed.D.) degrees. In addition, the department offers professional programs at the M.Ed. and Ed.S. levels for elementary and secondary school administrators and instructional supervisors. Programs in community education administration, higher education administration, and public school administration are offered at the doctoral level.

Graduate Program

Programs. Master of Education (M.Ed.), Educational Specialist (Ed.S.), Doctor of Education (Ed.D.).

Application Consideration Deadlines.
Summer Term: April 15.
Fall Semester: June 15.

Entry Times. Summer or Fall Semester only.

Master of Education

Prerequisites: A valid teaching credential and a minimum of one year of teaching experience.

Entrance Examination Required. Miller Analogies Test.

Fields. Master of Education degree (M.Ed.) in community education administration, elementary school administration, or secondary school administration.

Residence. At least **one** full time registration (8 hours) must be taken on the Brigham Young University campus.

Final Examination. A final written comprehensive examination covering course work will be administered during the final semester of work leading to the Master of Education degree.

Required Courses. Consult department.

This program is designed to prepare public school administrators for state certification at the elementary and secondary levels and to prepare community education administrators.

Educational Specialist

Prerequisites. Students seeking admission to the educational specialist program must present evidence of a valid teaching credential, a master's degree, and current service in an administrative position.

Entrance Examinations Required. Graduate Record Examination (Aptitude and Advanced Test in Education).

Fields. Community education administration, public school administration, supervision.

Academic and Residence Requirements. The Educational Specialist Program requires 60 semester hours of work beyond the baccalaureate degree. Programs are designed to meet the requirements of the Utah State Board of Education for the general administrative endorsements to the Professional Certificate. Twenty-four semester hours and **two** full-time registrations (8 hours) must be completed on the University campus. Advisory committees, appointed following admission to the program, will assist students in the preparation of a course of study.

Credit for Previous Work. Credit earned in a recognized master's degree program may be applied toward the total credit-hour requirement for the Educational Specialist.

Research Requirement. All students must demonstrate competency in educational research. Such competency is to be demonstrated in the design, implementation, and final written report of a professional educational project conducted on-site at the candidate's place of employment.

Final Examination. A final written examination covering all coursework will be administered during the final semester of work leading to the Educational Specialist degree.

Required Courses. Consult department.

This program is designed to prepare public school administrators for state certification at the school district level and to prepare community education administrators.

Doctor of Education

Prerequisites. A minimum of three years of professional experience in education, a master's degree, and administrative experience.

Entrance Examinations Required. Graduate Record Examination (Aptitude and Advanced Test in Education).

Fields. Educational administration, higher education administration, community education administration, public school administration.

Minors Permissible. Any approved minor.

Requirements. Minimum of 75 semester hours, proficiency in statistics, and a dissertation.

Residence. Two consecutive semesters on the Brigham Young University campus following admission.

Credit for Previous Work. Credit earned in a recognized master's degree or Educational Specialist program may be applied toward the total credit-hour requirement for the doctorate.

Required Courses. Consult department.

This program is designed to prepare public school administrators for service at the elementary, secondary, and higher education levels, and for community education administration.

Intern Doctoral Program

Prerequisites. A minimum of three years of professional experience in education or a field related to education, a master's degree, successful completion of the doctoral admissions seminar, and current service in an administrative position.

Entrance Examinations Required. Graduate Record Examination (Aptitude and Advanced Test in Education).

Fields. Educational administration, higher education administration, community education administration, public school administration.

Minors Permissible. Any approved minor.

Requirements. Minimum of 75 hours, proficiency in statistics, and dissertation.

Residence. Two consecutive full-time summer sessions on the Brigham Young University campus with an intervening supervised field experience of 5 to 8 semester hours for each of two semesters. This program is open only to practitioners enrolled in the Intern Doctoral Program.

Credit for Previous Work. Credit earned in a recognized master's degree program may be applied toward the total credit-hour requirement for the doctorate.

Required Courses. Consult department.

Educational Administration Courses

452. The Professional Teacher. (1:1:0) Prerequisite: ElEd. 400.

The teacher and the school: employment, control, professional relations, the law, finance, and professional affiliation.

453. Community Education. (1-2:Arr.:Arr.) Prerequisite: ElEd. 350.

Introduction to the concept, curriculum, and its service to the community.

500. Adult Education. (2:2:0) Home Study also. Prerequisite: departmental approval.

514R, 515R. Special Topics in Education. (½-3:1-3:1 ea.)

—Educational Administration
—Elementary Administration
—Secondary Administration
—Community Education

600. First-Generation Stewardship Concepts. (3:2:1) Prerequisite: graduate standing.

Principles, practice, and procedures in modern public school administration.

600R. Introduction to Educational Administration. (2:2:0 ea.)

601. First-Generation Stewardship Theory. (3:2:1) Prerequisite: EdAd. 610 or 612.

604. Community Education. (2:2:0) Home Study also. Prerequisite: graduate standing.

Basic concepts of the community school: history, organization, funding, leadership, facilities, and value to the community.

606. Community Education Curriculum. (2:2:0) Prerequisite: EdAd. 604.

608. Problems in Community Education Administration. (2:2:0) Prerequisite: EdAd. 604.

Leadership, organization, finance, legal aspects, and public relations.

610. Problems in Elementary School Administration. (2:2:0) Prerequisite: EdAd. 600R.

612. Problems in Secondary School Administration. (2:2:0) Prerequisite: EdAd. 600R.

614. Administration of Special Education Programs. (2:2:0) Prerequisite: EdAd. 600R.

616. Problems in Vocational Education Adminis-

tration. (1:1:0) Prerequisite: EdAd. 600R.

618. Problems in Adult and Continuing Education Administration. (2:2:0) Prerequisites: EdAd. 500 and 600R.

620. Financial Aspects of Education. (1:1:0) Prerequisite: EdAd. 600R.

622. Legal Aspects of Education. (1:1:0) Prerequisite: EdAd. 600R.

626. Community Participation in the Decision Process. (1:1:0) Prerequisites: EdAd. 600 and 608.

630. Supervision of Education. (3:3:0) Prerequisite: EdAd. 610 or 612.
Principles of supervision, curriculum, planning, and inservice training.

632R. Field Work in Educational Administration. (1-6:0:1-18 ea.) Prerequisite: EdAd. 610 or 612.

634R. Internship in Community Education. (1-6:0:18 ea.) Prerequisites: EdAd. 600R, 604, and 608.
Field experience in community education in state and local level agencies in Utah, Idaho, Wyoming, and Nevada.

636R. Problems in Community Education. (1-2:1-2:0 ea.) Prerequisites: EdAd. 604 and 634R.

640. The Community College. (3:3:0) Prerequisite: graduate standing.

644R. Directed Teaching in College. (1-4:4:0 ea.) Prerequisite: SecEd. 642.
Teaching at the two-year and four-year college level, participating as a member of a college staff, and preparing for employment at a collegiate institution.

650. Introduction to Educational Research. (3:3:0)

660R. Educational Needs Assessment. (1:1:0 ea.)

670R. Workshop in Educational Administration. (1-3:1-3:0 ea.) Prerequisites: EdAd. 610 and 612.

680. Economic Aspects of Education. (2:2:0) Prerequisites: EdAd. 600R and 620.
Theory, principles, and general practices of public school finance.

682R. Advanced School Law. (2:2:0 ea.) Prerequisites: EdAd. 600 and 622.

684. Business Administration of the Public School. (2:2:0) Prerequisite: EdAd. 680.

686. Professional Negotiations. (1:1:0) Prerequisites: EdAd. 680 and 682R.

688. Public School Building Programs. (2:2:0) Prerequisites: EdAd. 680 and 682R.

691. Doctoral Admission Seminar. (1-2:1-2:0) Prerequisite: permission of department.

700. Leadership in Educational Administration. (3:3:0) Prerequisite: EdAd. 610 or 612.
Developmental leadership theory, group processes, concepts, and strategies; opportunity for leadership experience.

701R. Problems in First-Generation Stewardship. (1-3:1:0 ea.) Prerequisites: EdAd. 600R, 650.

702R. Problems in Second-Generation Stewardship. (1-3:2:0 ea.) Prerequisites: EdAd. 610 and 612.

703R. Problems in Third-Generation Stewardship. (1-3:2:0 ea.) Prerequisites: Doctoral standing and consent of instructor.

710R. Contemporary Problems in Educational Administration. (2:2:0 ea.)

720. Research, Planning, and Evaluation of Educational Projects. (2:2:0 ea.) Prerequisites: EdAd. 650 and Stat. 552.
Research techniques and designs in the field of education.

722. Evaluation of Educational Programs. (2:2:0) Prerequisite. EdAd 650.

730R. Independent Research in Educational Administration. (1-4:Arr.:Arr. ea.) Prerequisite: EdAd. 720 or consent of instructor.

734R. Independent Readings in Educational Administration. (1-3:1-3:0 ea.) Prerequisite: consent of instructor.

750. Introduction to Fault-Tree Analysis. (2:2:0) Prerequisite: doctoral standing and consent of instructor.

752R. Field Application of Fault-Tree Analysis. (1-2:0:1-9 ea.) Prerequisite. EdAd. 750.

754. Administration of Special Programs in Education. (2:2:0) Prerequisite: doctoral standing or consent of instructor.

758. Political Aspects of Education. (2:2:0) Prerequisite: EdAd. 624.

760. Problems in Community College Administration. (1:1:0) Prerequisite: EdAd. 640.

762. Community College Curriculum. (2:2:0) Prerequisite: EdAd. 640.

764. Higher Education in America. (2:2:0) Prerequisite: doctoral standing.

766. Problems in Higher Education Administration. (2:2:0) Prerequisite: EdAd. 764.

768R. Theory in Educational Administration. (2:2:0 ea.) Prerequisite: EdAd. 700.

780R. Internship in Educational Administration. (2-6:0:6-18 ea.) Prerequisite: consent of instructor eight weeks in advance of registration.

790R. Seminar in Educational Administration. (2:2:0 ea.) Prerequisite: EdAd. 700.

795. Research Design for Doctoral Dissertation. (2:2:0) Prerequisites: EdAd. 650 and Stat. 552.

799R. Dissertation. (6-12:Arr.:0 ea.) Prerequisite: EdAd. 795.

Department of Educational Psychology

Professors: Crandell, Downing, Gale (Chairman, 240 MCKB), J. Harris, B. Harrison, Jensen, Kelly, Low, Newman, Rohde, Thomas.
Associate Professors: Bingham, Buckner, Chamberlain, Heaps, Hendrix, Ingram, Johnson, Jones, Kay, Peterson, Wadham, Walton, Weaver, Williams, Winward, Wootton.
Assistant Professors: Craig, C. Harris, Ravsten.

Undergraduate Program

The Department of Educational Psychology offers programs leading to the bachelor's degree in special education. These programs are designed to prepare teachers of the mentally handicapped, the learning disabled, the emotionally handicapped, and those with communicative disorders (speech pathology and audiology). A composite major with elementary education and special education is also offered and recommended. Dual certification in other areas of special education is also available. For information on specific requirements, the student should contact the program chairman of special education, the program coordinator in the specific area of exceptionality, or the College of Education Advisement Center

Graduate Program

The Department of Educational Psychology offers programs leading to graduate degrees in the areas of communicative disorders, school psychology counseling and guidance, special education, and educational psychology. Programs leading to certification in the above areas are also offered (special application and approval required).

The Master of Communicative Disorders (MCD) is granted to those who complete the five-year program of professional training in communicative disorders. Completion of the communicative disorders program qualifies a student for professional certification in speech pathology or audiology. Associated work in learning disabilities and elementary education qualifies the student for additional certification in learning disabilities and elementary education. In the fifth year of professional preparation, students may elect to complete master's degree requirements in (1) full-time enrollment or (2) part-time enrollment accompanied by on-the-job training.

Programs. Master of Education (M.Ed.), Master of Communicative Disorders (MCD), Master of Arts (M.A.), Educational Specialist (Ed.Sp.), Doctor of Education (Ed.D.), Doctor of Philosophy (Ph.D.).

Entrance Examinations Required. All programs require the Graduate Record Examination (verbal, quantitative, and advanced test in education or psychology) and other tests as determined by area of study. **Applications will not be considered without appropriate test scores.**

Application Consideration Dates.
Fall Semester: May 15
Summer Term: March 31
Deadlines will be strictly adhered to.

Entry Times. Fall Semester and Summer Term only. School psychology majors, Fall Semester only.

Master of Education/Master of Communicative Disorders

Prerequisites. A valid teaching credential or appropriate professional experience as determined by major area of study.

Fields. The Master of Education degree (M.Ed.) in counseling and guidance, educational psychology, special education, school psychology; Master of Communicative Disorders degree (MCD) in communicative disorders.

Minors Permissible. Any approved minor; Option 2.

Requirements. Minimum of 34-39 semester hours. Course work outside the major area of study may be required.

Residence. At least one full-time registration must be taken on the Brigham Young University campus.

Credit for Previous Work. Credit earned in compliance with state certification or renewal requirements must be evaluated and approved by the student's sponsor to be applied toward the total credit-hour requirement for the Master of Education degree.

Final Examination. A written and/or oral comprehensive examination is required at the completion of course work.

Required Courses. Consult department.

Master of Arts

Prerequisites. A valid teaching credential or appropriate professional experience as determined by major area of study.

Fields. Communicative disorders, clinical audiology, counseling and guidance, educational psychology, school psychology (interdepartmental), special education.

Minors Permissible. Any approved minor; Option 2.

Requirements. Minimum of 27 semester hours plus thesis (6-hr. min.—EdPsy. 699R).

Residence. At least one full-time registration must be completed on the Brigham Young University campus.

Final Examination. An oral and/or written comprehensive exam is required at completion of course work. Oral defense of thesis required.

Required Courses. Consult department.

Educational Specialist.

Prerequisites. A valid teaching credential or a minimum of two years of appropriate professional experience, as determined by major area of study, and a master's degree.

Fields. Counseling and guidance, special education.

Minors Permissible. Any approved minor.

Requirements. Minimum of 66 semester hours: competency in research as demonstrated by completion of a professional education project.

Residence. At least two full-time registrations must be completed on the Brigham Young University campus.

Final Examination. An oral and/or written comprehensive examination is required at completion of course work.

Required Courses. Consult department.

Doctor of Education

Prerequisites. A valid teaching credential and/or a minimum of three years of appropriate professional experience, as determined by major area of study, and a master's degree or the equivalent.

Fields. Counseling and guidance, educational psychology, special education.

Minors Permissible. Any approved minor.

Requirements. Minimum of 75 semester hours, proficiency in statistics at the level of Stat. 554 (Advanced Statistics), a dissertation (12-hr. min.—EdPsy. 799R).

Residence. Two consecutive full-time semesters on the Brigham Young University campus beyond the master's degree; or, as part of an approved intern program, two consecutive full-time Summer Term sessions on the Brigham Young University campus with intervening supervised field experience.

Final Examination. Written comprehensive examination required at completion of course work. Oral defense of dissertation.

Required Courses. Consult department.

Doctor of Philosophy

Prerequisites. A master's degree in education or psychology or the equivalent and appropriate professional experience.

Fields. Counseling and guidance, educational psychology, special education.

Minors Permissible. Any approved minor.

Requirements. Minimum of 24 semester hours beyond master's degree, plus dissertation (18-hr. min.—EdPsy. 799R); satisfaction of tool subject prerequisites; proficiency in statistics at the level of Stat. 554 (Advanced Statistics), and research.

Final Examination. Written comprehensive examination required at completion of course work. Oral defense of dissertation.

Required Courses. Consult department.

Educational Psychology Courses

30. Communication Therapy. (3:0:4)
Tutorial and small group work to assist college students who have such disorders as articulation difficulties or stuttering. A noncredit, nonfee service course.

100. Introduction to Human Communication Processes. (2:2:0)
Survey and application of intra- and interpersonal human communication.

101R. Field Work in Special Education. (1-2:0:2-4 ea.)

205. Education of Exceptional Children. (3:2:2) Home Study also.
Causes, recognition, incidence, and characteristics of all exceptionalities.

230. Normal Development of Human Communication. (2:2:1)
Influence of physiological maturation and learning.

231. Phonetics. (2:2:0)
Phonetic modes of thought and phonetic symbols, using phonetic nomenclature to describe principal varieties of the English language in America.

233. Remediation of Communicative Disorders. (2:2:0)
How parents, teachers, and others can help children with speech, hearing, or language disorders in the home or within the context of the regular curriculum.

333. Communication Disorders 1. (6:5:10) Prerequisites: EdPsy. 100, 230, 231.
Diagnosis and habilitation of dysfunctions: communicative relationships, affect, attention, memory, conceptualization, codification, and speech production.

334. Communication Disorders 2. (6:5:10) Prerequisites: EdPsy. 100, 230, 231.
Diagnosis and habilitation of dysfunctions: auditory, visual, and haptic sensation. Includes conducting and interpreting audiometric tests.

335. Communication Disorders 3. (4:3:3) Prerequisites: EdPsy. 333, 334.
Diagnosis and habilitation of dysfunctions: auditory, visual, and haptic perception; motor production. Managing the hearing impaired; introduction to hearing aids.

403R. Development and Learning. (1-4:Arr.:Arr. ea.)
Learning process, readiness, individual differences, motivation, and evaluation.

406. Learning Abilities of Exceptional Children. (3:2:2) Prerequisites: EdPsy. 205 and consent of instructor.
Learning as it relates to specific characteristics of exceptional children.

407. Resources for Exceptional Children. (3:2:2) Prerequisite: EdPsy. 205.
Vocational planning and school, community, and parent relationships.

410. Curriculum for Emotionally Handicapped Children. (3:2:2) Prerequisites: EdPsy. 205.
Identification, classification, and characteristics of the emotionally disturbed; general problems in their care, management, and education.

415. Education of the Visually Handicapped. (3:2:2)
Identification, classification, and characteristics of the visually handicapped, and general problems in their care and education.

416. Standard English Braille. (3:3:0)
Systematic presentation for those who intend to teach the visually handicapped or do volunteer transcribing. Not a course in touch reading.

417. Educational Implications of Visual Impairment. (3:2:2) Prerequisite: EdPsy 205.
Structures, functions, and impairments of the organs of vision; educational implications of visual loss.

420. Education of the Mentally Retarded. (3:2:2) Home Study also. Prerequisite: EdPsy. 205 or equivalent.
Identification, classification, and characteristics of the retarded and general problems in their care, management, and education.

425. Arts for the Handicapped. (4:2:0)
Basic principles of an experience with art activities, emphasizing adaptations to meet the needs of the disabled.

426. Introduction to Teaching Children with Learning Disabilities. (3:2:2) Prerequisite: EdPsy. 205.
Classroom identification, diagnosis, and adjustment of curriculum to meet the needs of children with learning disabilities. For special and regular classroom teachers.

433. Communication Disorders 4. (6:5:10) Prerequisites: EdPsy. 333, 334, 335.
Diagnosis and habilitation of dysfunctions in school settings with relation to arithmetic, reading, writing, spelling, language, and speech production.

434. Diagnosis of Communication-Learning Dysfunctions. (3:2:6) Prerequisites: EdPsy. 333, 334, 335, 433.
Applying diagnostic information in planning habilitation of communication-learning dysfunctions, including sensation, perception, memory, language, speech, and other communicative relationships.

435. Audiology. (2:2:4) Prerequisites: EdPsy. 333, 334, 335.
Administering, conducting, and interpreting advanced audiometric tests.

455. Educational Media Production and Utilization. (2:1:3)

490R. Seminar. (1-2:2:0 ea.)

493R. Readings. (1-2:Arr.:Arr. ea.)

500. Research Design in Educational Psychology. (3:3:0 ea.)

501. Educational Tests and Measurements. (3:3:0) Home Study also. Prerequisite: EdPsy. 430R or equivalent.
Principles of test construction and use; interpretation of standardized tests.

502. Behavior Problems in the School. (2:2:0)

505. Psycho-Educational Implications of Exceptionality. (1-3:Arr.:Arr.)

506. Behavioral Science Foundations for Special Education. (1-3:Arr.:Arr.)

507. Evaluation of Individual Differences. (1-3:Arr.:Arr.)

510. Education of Emotionally Handicapped Children. (3:3:1) Prerequisites: EdPsy. 205 and consent of instructor.
Organization of educational programs, curricular development, and teaching methods for students with emotional problems.

511. Curriculum for Emotionally Handicapped Children. (3:2:2)
Curriculum development for educating emotionally handicapped children.

514R, 515R. Special Topics in Education. (1-3:1-3.1 ea.) Home Study also.

- **—Educational Psychology**
- **—Remedial Reading**
- **—Behavior Modification**
- **—Effectiveness Training**
- **—Transactional Analysis**
- **—Specific Problems in Special Education**
- **—Diagnostic and Psychological Tests in School Setting**
- **—Changing Role of Counselors**
- **—Issues of Communicative Disorders**

*This course will cover various phases of the subject matter, end title may change to fit specific category

516. Advanced Braille. (1-4:Arr.:Arr.) Prerequisites: EdPsy. 416 and consent of instructor.

517. Curriculum for the Visually Handicapped. (1-4:Arr.:Arr.) Prerequisites: EdPsy 415, 416.
Problems confronting administrator and teacher in school programs now available for the visually handicapped; specialized teaching methods and materials.

520. Curriculum for Mentally Retarded Children. (3:3:2) Prerequisite: EdPsy. 420.
Placement and organization of educational programs, curriculum development, and teaching methods for classes for mentally retarded students

526. Curriculum for the Learning Disabled. (3:3:0) Prerequisite: EdPsy. 205, 426, or consent of instructor.

Organization of educational programs, curriculum development, and teaching methods for children with learning disabilities.

530. Sign Language and Manual Communications Systems. (3:3:2)

Provides orientation to manual communication systems and functional skill in the use of Ameslan, finger spelling, and other nonoral language forms.

545. Counseling and Guidance Services. (2:2:0) Home Study also.

Principles and practices of pupil personnel services in the public schools.

555. Educational Media in the Schools. (3:2:3)

556. Selection and Utilization of Instructional Media. (2:2:0)

557. Media Production Techniques. (2:1:3)

558. Photography and Instruction. (2:1:3)

559. Art and Graphic Production. (3:2:3)

560. Instr. Audio Progrm. (2:1:3)

565R. Proseminar in Instructional Psychology. (3:3:0)

573. Workshop for Teachers of Bilingual Children. (2:8 hrs./day for two weeks:0)

Study of educational needs, materials, and methods appropriate to the background and language problems of bilingual students.

580R. Directed Observation in the Schools. (2:1:4 ea.) Prerequisite: consent of instructor.

581R. Practicum in Mental Retardation. (2-8:0:5-12 ea.) Prerequisite: consent of instructor.

582R. Practicum in Emotionally Handicapped. (2-8:0:5-12 ea.) Prerequisite: consent of instructor.

583R. Practicum in Visually Handicapped. (2-8:0:5-12 ea.) Prerequisite: consent of instructor.

584R. Practicum in Learning Disabilities. (2-8:0:5-12 ea.) Prerequisite: consent of instructor.

585R. Practicum in Communicative Disorders. (2-8:1:5-12 ea.) Prerequisite: consent of instructor.

591R. Master's Admission Seminar. (1-3:2:2 ea.) Prerequisite: provisional admission to master's degree program.

600. (EdPsy.-InScl.) Research Design and Critical Analysis in Educational Psychology. (3:3:0) Prerequisite: Stat. 552.

601. Advanced Educational Psychology. (3:3:1)

603. Guidance and Counseling for the Handicapped. (2:2:0)

Principles and techniques of guidance services for the physically, mentally, or socially handicapped. Required for California certification.

604. Special Education Services in Public Schools. (2:2:0)

605. Language and Other Communication Disorders of the Severely Handicapped. (2:2:1)

606. Dynamics of Human Communication. (2:2:0)

625. Diagnosis of Achievement Difficulties. (3:2:2) Prerequisite: consent of instructor.

626. Remedial Teaching Techniques. (3:2:2) Prerequisites: EdPsy. 505 or equivalent.

627. Diagnostic Teaching. (2:1:2) Prerequisite: EdPsy. 505 or equivalent.

Principles and practices to enable the teacher to determine and remediate learning problems.

628. Prescriptive Teaching. (2:1:2) Prerequisite: EdPsy. 505 or equivalent.

Analyzing and supporting information from all sources, where necessary, to build an individualized remedial program.

629. Motor Perception. (2:1:2)

Diagnosis and remediation of motor perceptual problems which interfere with learning; using tools such as Kephart, Frostig, Cranney, etc.

630. Disorders of Articulation. (2:2:2)

631. Stuttering. (2:2:1)

632. Voice Disorders. (2:2:1)

633. Language Disorders in Children. (2:2:3)

634. Seminar in Organically Based Speech Disorders. (2:2:0)

635. Speech and Hearing Science. (2:2:0)

636. Anatomy and Physiology of Human Communication. (2:0:0)

637. Aphasia. (2:2:1)

638. Clinical Audiology. (2:2:2)

Administering new and advanced audiometric procedures in assessing impaired hearing.

639. Community and Industrial Audiology. (2:2:1)

Hearing problems in industry; legal implications.

640. Pediatric Audiology. (2:2:1)

Intensive study of the problems encountered, the rationale behind, and the audiological instruments used to assess hearing of infants and young children.

641. Hearing Aids. (2:2:0)

Acquaints students in speech, hearing, and related fields with basic designs, operation, selection, and use of hearing aids of all types.

642. Counsel, Guidance, and Education of the Hearing Impaired. (2:2:0) Prerequisite: EdPsy. 205.

643. Aural Rehabilitation. (2:2:2)

644. Methods and Problems of Research in Communicative Disorders. (2:2:0)

Students should take this course early in their graduate program to prepare for their thesis projects.

645. Guidance Testing and Diagnosis. (3:3:0) Prerequisite: EdPsy. 545.

Advantages and disadvantages of particular types of tests; practice in interpreting test results; implications of test choices and usage.

646. Counseling Theory and Practice. (3:3:0) Home Study also but restricted to commissioned and prospective chaplains. Prerequisite: EdPsy. 545.

Intensive study of the various theories of counseling, current research, and accepted practices.

647. Laboratory in Counseling Practice. (1:0:2) Prerequisite: completion of or concurrent registration in EdPsy. 545, 646.

648. Group Techniques for Counselors. (3:2:0) Prerequisite: EdPsy. 646.

649. Informational Services and Resources. (3:2:2-4) Prerequisite: EdPsy. 545.

Techniques and theories of vocation selection and utilization of community resources, occupational data, and psychological factors underlying career choices.

650. Organization of Guidance. (2:2:0) Prerequisite: EdPsy. 545.

651. Laboratory for Guidance Services. (1:0:2) Prerequisite: completion of or concurrent registration in EdPsy. 650.

652. Elementary School Guidance. (2:2:0)

653. Student Personnel Services in Higher Education. (2:2:0) Prerequisite: EdPsy. 545.

654. Career Education. (3:3:1)

670. Instrumentation in Communicative Disorders. (2:1:2)

Technical equipment used in audiology, psychophysics, and speech science; functions of calibration, measurement, monitoring, programming, and recording.

674. Psycholinguistics. (2:2:0) Prerequisite: EdPsy. 505.
Administering, programming, and applying research based on the Illinois Test of Psycholinguistic Abilities (ITPA).

680R. Internship in Educational Psychology. (2-6:0:6-18 ea.) Prerequisite: consent of instructor eight weeks in advance of registration.

681R. Practicum in Educational Psychology. (2-4:1-2:4-8 ea.)

682R. Practicum in School Psychology. (2-4:1-2:4-8 ea.)

683R. Practicum in Special Education. (2-4:1-2:4-8 ea.)

684R. Practicum in Counseling and Guidance. (2-4:1-2:4-8 ea.)

685R. Practicum in Communicative Disorders. (2-4:1-2:4-8 ea.) Prerequisite: consent of instructor.

690R. Seminar. (2:2:0 ea.) Prerequisite: consent of instructor.

691R. Doctoral Admission Seminar. (1-2:2:0)

692R. Advanced Topics in Special Education. (1-3:Arr.:Arr. ea.) Prerequisite: consent of instructor.

693R. Readings. (1-5:Arr.:Arr. ea.) Prerequisite: consent of instructor.

694R. Special Projects in Communicative Disorders. (1-3:1-3:0 ea.) Prerequisite: consent of instructor.

696R. Research. (1-5:Arr.:Arr. ea.) Prerequisite: consent of instructor.

698R. Field Project. (2-4:Arr.:Arr. ea.) Prerequisites: Stat. 552 and EdPsy. 600 or equivalent.

699R. Thesis. (6-9:Arr.:Arr. ea.)

700. Research Design for Doctoral Dissertation. (2:2:4) Prerequisites: doctoral candidacy and Stat. 552 or equivalent.

745. Advanced Counseling Theory. (2:2:0) Prerequisites: EdPsy. 646, Psych. 550.

765. Systems Analysis Research and Development Management. (3:3:0) Prerequisite: ComSci. 131 or equivalent.
Planning, budgeting, organizing, and managing complex instructional systems.

780R. Internship. (2-8:0:6-24 ea.) Prerequisite: consent of instructor eight weeks in advance of registration.

784. Advanced Practicum in Counseling and Guidance. (3:1:8) Prerequisite: consent of instructor.

790R. Advanced Seminar. (2:2:0 ea.) Prerequisite: consent of instructor.

796R. Advanced Research. (2-4:Arr.:Arr. ea.) Prerequisite: consent of instructor.

799R. Dissertation. (6-9:Arr.:Arr. ea.) Prerequisite: EdPsy. 700 or equivalent.

Department of Elementary Education

Professors: R. Allred, Berryessa, C. Clark, Daines, Harmon, Laird, Sucher, Wolfgramm.
Associate Professors: J. E. Baird (Chairman, 240 MCKB), Bishop, Butterfield, Campbell, Cutler, Dunn, Harms, C. Harris, Heil, Moore, Ord, Puckett, Wade, Wadham, Winterrose, Young.
Assistant Professors: Anderson, Bowles, Chai, W. H. Clark, Jacobs, Hardy, Nelson, Searle, Tolman.
Instructors: Knight, Koplin, Tuttle.

Undergraduate Program

The Department of Elementary Education offers a comprehensive program in the professional preparation of elementary teachers which satisfies requirements for the standard elementary teaching certificate and an endorsement in early childhood education as well as graduation requirements for students registered in the College of Education.

The program consists of three elements:

1. University requirements for general education
2. The academic-support area
3. The professional preparation, which includes 34 semester hours of designated professional education courses constituting a major in elementary education.

Students must maintain an overall GPA of 2.50. Also, the following courses in the major must be passed with a C (2.00) or better: ElEd. 300 and 350, and in the Phase 5 series, ElEd. 451 through 470 and 527. Other courses in the major are subject to review.

1. General Education Requirements
See the general education programs sections of this catalog.

2. Academic Support Area (26 hours)
- a. Humanities and aesthetics (8 hours): ArtDs. 326; Music 380; ElEd. 340.
- b. Math. (3 hours): Math. 305.
- c. Physical education and health (5 hours): PE 375 or 376 and Health 361.
- d. Specialization area (minimum 10 hours) or minor (15-17 hours). Elementary majors are required to have a minimum of 10 hours in an approved area of specialization or a minor of 15-17 hours. They may be chosen from the following:

Specialized Areas
Art: ArtDs. 102, 103, 104, 105, 106, 107, 108, 311, 312.
Bilingual/Bicultural Education: ElEd. 355, 356, plus 6 hours of electives in foreign language or linguistics, or other bilingual/bicultural-related courses.
CDFR: 210, 222, 305, 310, 312, 362, 410.
Humanities: At least one course must be selected from each of the following areas: ArtDs. 101, 102, 103, 312; Hum. 101, 201, 202; Music 101, 103.
Indian Education: IndianEd. 323 (required), 101, 107, 201, 401; Anthro. 317; Engl. 250R, Hist. 462, 463, 457, 469; Ling. 301R, 302R; Sociol. 223.
Language arts: EdPsy. 233; ThCA 360, 472R, 527, 572R; Engl. 326, 218R.
Mathematics: Math. 306 and 7 hours chosen from: Math. 110, 210, 300, 301, 302, 371, 372, 387, 451, 495R.
Modern language: French—201, 301, 311, 326, 445; ElEd. 330. German—201, 301, 311, 326, 401; ElEd. 330. Spanish—201, 301, 311, 326, 445, 455: ElEd. 330.
Music: Music 195, 200R, and 421 are required (Music 195 and 200R are to be taken concurrently.) Choose the remaining credits (4 hours) from ensemble classes or applied music study in piano and voice classes.
Outdoor Education: Bot. 205, 400; YthLdr. 370, 378, 380, 381, 382, 480; RecEd. 123, 502R.
Physical Education: Men: PE 231, 232, 234, 236, 237, 238, 240, 330, 372, 373. Women: PE 330 and 340, and 5 hours selected from PE 173, 187, 241, 242, 244, 245, 246, 247, 248, 249. To declare a minor, see Women's PE Department for details.
Reading: ElEd. 454, 455, 456, 457, 458, 527, or 547.
Science (choose from at least three fields):Chem. 100; Geol. 104; Physics 127, 137; Bot. 205, 250, 400; Zool. 260, 261, 325.
Social Science: To be selected from the following in at least three fields: Anthro. 105; Econ. 110; Geog. 211, 231, 501; Hist. 110, 111, 120, 121, 462, 463, 465, 466, 469; PolScl. 105R, 110; Psych. 111, 350; Sociol. 111, 112, 361, 526.

Special Education: EdPsy. 205 required; at least two courses from EdPsy. 406, 420, 426, 507, 510.

TESL (Teaching English as a Second Language): Engl. 321 or 422; Ling. 325 (sec. 2); ESL 477. Recommended: ESL 528. ESL 477 and 528 offered once a year.

Minors

ArtDs: 116(5), 117(5), 311(3) or 312(2); and at least two classes from the following: 333R(2), 356R(3), 322R(2), 327R(3), 359R(3), 361R(3).

English: 303(4), 321(3), 420(2); and at least 6 hours from the following: 218R(2), 270(3), 315(2), 325(3), 421(3).

French: 301(3), 311(2), 321(3), 326(2); and at least 5 hours from the following: 211(2), 345(3), 411(2), 429(3), 441(3).

German: 301(3), 311(2), 321(3), 326(2); and at least 5 hours from the following: 211(2), 341R(3), 401(3), 429(3).

Spanish: 301(4), 321(3), 326(2); and at least 6 hours from the following: 211(2), 311(2), 441(4), 345R(3), 425(3).

Reading: Prerequisite: required elementary education reading courses. ElEd. 454(2), 578R(2) or SecEd. 578R(2), 455(1), 457(2), 458(2), 547(3), Engl. 420(2); and one of the following: ElEd. 456(2), 527(2), EdPsy. 626(3).

Mathematics: 112(4), 113(4), 301(3), 302(3), 214(3).

Physical Education: 173(½), 187(½), 233(½), 241(½), 242 (½), 245(½), 246(½), 247(½), 330(3), 341(3), 344(3), 375(2) or 376(2)—whichever has not been taken before—378A(1), 478(4).

Science: Prerequisite: PhySci. 100 and Zool. 351. Zool./Bot. 250(3) or Geol. 104(3) or Physics 137(3), Bot. 205(3), Geol. 101(3), Zool. 352(3); and a minimum of 3 hours from Physics 127(3), Physics 128(1), FSN 115(2), AgHrt. 105(3), Geol. 305(2), Micro. 311(2).

3. Major in Elementary Education (34 hours)

	Hours
ElEd. 200 (Phase 1)	2
ElEd. 300 (Phase 2)	8
ElEd. 350 (Phase 3)	8
ElEd. 400 (Phase 4)	8
ElEd. 450 (Phase 5)	8

Program Guides. Copies of the Elementary Program Guide, which describes the elementary education major program in detail, are available in the Advisement Center for the College of Education at the Teacher Clearance Office (TCO).

Graduate Program

Programs. Master of Education (M.Ed.), Master of Arts (M.A.), Educational Specialist (Ed.Sp.), Doctor of Education (Ed.D.).

Entrance Examination Required. Graduate Record Examination (Aptitude and Advanced Test in Education for Ed.Spec. and Ed.D.; Aptitude Test only for M.Ed. degree).

Application Consideration Dates. Same as Graduate School deadlines.

Entry Time. Summer Term only on master's degree programs.

Master of Education

Prerequisites. A valid elementary teaching credential. One year of successful teaching experience. The Reading Specialist degree requires three years of successful professional education experience prior to graduation.

Fields. Elementary curriculum and instruction, reading specialist.

Minors Permissible. Option 1, any approved minor; Option 2.

Requirements. Minimum of 36 semester hours; either a written or an oral comprehensive examination.

Residence. At least one full-time summer or semester registration must be taken on the Brigham Young University campus.

Credit for Previous Work. Up to 10 hours of credit can be applied toward a Master of Education degree. This credit must be evaluated and approved by the student's advisory committee.

Required Courses. Consult departmental brochure.

Master of Arts

Prerequisite. A valid elementary teaching credential. One year of successful teaching experience. The Reading Specialist degree requires three years of successful professional education experience prior to graduation.

Fields. Elementary curriculum and instruction, reading specialist.

Minors Permissible. Option 1, any approved minor; Option 2.

Requirements. Minimum of 33 semester hours; a final oral examination.

Residence. At least one full-time summer or semester registration must be completed on the Brigham Young University campus.

Credit for Previous Work. Up to 10 hours of credit can be applied toward a Master of Arts degree. This credit must be evaluated and approved by the student's advisory committee.

Required Courses. Consult departmental brochure.

Educational Specialist

Prerequisites. A valid elementary teaching credential, a minimum of two years of teaching experience, and a master's degree.

Fields. Elementary curriculum and instruction, reading specialist.

Minors Permissible. Any approved minor; Option 2.

Requirements. Minimum of 60 semester hours; a field project (6-hr. min.—ElEd. 699R).

Residence. At least two full-time consecutive semester registrations on the Brigham Young University campus or, as part of an approved intern program, two consecutive full-time Summer Term sessions on the BYU campus with intervening supervised field experience must be completed.

Credit for Previous Work. Credit applied toward an Educational Specialist degree must be evaluated and approved by the student's advisory committee.

Required Courses. Consult department.

Doctor of Education

Prerequisites. A valid elementary teaching credential, a minimum of three years of successful professional education experience, and a master's degree.

Field. Elementary curriculum and instruction.

Minors Permissible. Any approved minor, Option 2.

Requirements. Minimum of 75 semester hours; proficiency in statistics; a dissertation (12-hr. min.—ElEd. 799R).

Residence. Two consecutive full-time semesters on the Brigham Young University campus beyond the master's degree or, as part of an approved intern program, two consecutive full-time Summer Term sessions on the BYU campus with intervening supervised field experiences must be completed.

Credit for Previous Work. Credit applied toward a Doctor of Education degree must be evaluated and approved by the student's advisory committee.

Required Courses. Consult department.

Elementary Education Courses

200. Educational Exploration. (2:2:1) Prerequisite: approved application to the elementary program.
Examination of the teaching profession and evaluation of oneself as a potential elementary teacher. GPA of 2.5 required. $10 fee payable at midterm.

300. Teacher Assistant Experience. (1-8:Arr.:Arr.) Prerequisite: ElEd. 200.
Learning theory, teaching techniques, and principles of child development. One-half day in a public school for a full semester.

330. Teaching Foreign Language in the Elementary School (FLES). (2:2:Arr.) Prerequisite: ElEd. 300 and foreign language courses numbered 321 and 322.

340. Children's Literature. (2:2:0) Home Study also.
Evaluation of significant books that meet children's needs. Not open to freshmen.

350. Elementary Education. (8:4:4) Prerequisite: ElEd. 300.
Teaching social studies, science, math, reading and language arts. Organized in three modules. Students will register, then be assigned to appropriate module.

350A. Methods and Strategies of Teaching Reading/Language Arts. (4:3:3) Prerequisite: ElEd. 300.
ElEd. 400 application and fee ($45) required during ElEd. 350.

350B. Methods and Strategies of Teaching Math. (2:1:1) Prerequisite: ElEd. 300.

350C. Methods and Strategies of Teaching Science/Social Studies. (2:2:2) Prerequisite: ElEd. 300.

351. Bilingual Elementary Language Arts—Navajo. (3:3:0) Prerequisites: bilingual Navajo/English, ElEd. 200 and 300.

352. Bilingual Math, Science, and Social Studies—Navajo. (3:3:0) Prerequisites; bilingual Navajo/English, ElEd. 200 and 300.

355. Bilingual Reading and Language Arts Methods—Spanish. (2:2:0) Prerequisites: bilingual Spanish/English, ElEd. 200 and 300.

356. Bilingual Math, Science, and Social Studies Methods—Spanish. (2:2:0) Prerequisites: bilingual Spanish/English, ElEd. 200 and 300.

400. Classroom Teaching Experience. (8:Arr.:Arr.) Special fee and prior application required. Prerequisite: ElEd. 350 and 451.

401. Bilingual Elementary Student Teaching—Navajo. (8:8:0) Prerequisites: ElEd. 351 and 352.

402. Bilingual Elementary Student Teaching—Spanish. (8:8:0) Prerequisites: ElEd. 355 and 356.

450. Value Clarification in Education. (2:2:0) Prerequisite: ElEd. 350.
Clarification of personal goals and values as these relate to the educational process.

451. Instructional Media. (1:1:0) Prerequisite: ElEd. 300.

☐ **Educational Administration 452. The Professional Teacher.** (1:1:0) Prerequisite: ElEd. 350.

453. Community Schools. (1:1:0)

454. Evaluating Reading Performance. (2:2:0) Prerequisite: ElEd. 350.

455. Recreational Reading. (1:1:0) Prerequisite. ElEd. 350.

456. Teaching Oral and Written Expression. (2:2:0)

457. Teaching Reading in the Content Areas. (2:2:0) Prerequisite: ElEd. 350.

458. Individualizing Reading Instruction. (2:2:0) Prerequisite: ElEd. 350.

459. Organizing Spelling and Listening Programs. (2:2:0) Prerequisite: ElEd. 350.

461. Individualized Instruction in the Elementary School. (2:2:0) Prerequisite: ElEd. 350.
Techniques for individualizing instruction in the elementary school.

462. SS-Sci Innovations. (1:1:0) Prerequisite: ElEd. 350.
Modern innovations in science and social studies in the elementary school.

463. Cultural Differences. (1:1:0) Prerequisite: ElEd. 350.

464. Bilingual Issues and Problems—Elementary Education. (1:1:0) Prerequisites: ElEd. 351, 352, 355, 356.

465. Math Enrichment. (1:1:0) Prerequisite: ElEd 350.
Students prepare, demonstrate, and participate in enrichment and media-type math activities.

467. Principles of Learning and Behavior. (2:2:0) Prerequisite: ElEd. 350.

468. Precise Classroom Evaluation. (1:1:0) Prerequisite: ElEd. 350.

469. Creating a Climate for Creativity. (1:1:0) Prerequisite: ElEd. 350.

470. Developing Positive Self-Concepts. (1:1:0) Prerequisite: ElEd. 350.

490R. Seminar. (1-2:2:0 ea.) Prerequisite: consent of instructor.

493R. Independent Readings. (1-2:Arr.:Arr. ea.)

514R. Special Topics in Education. (1-3:1-3:1 ea.) Home Study also.
—Precision Teaching
—Reading
—Mathematics
—Social Sciences
—*Sciences
Environmental Education
—Individual Instruction—Elementary
—Curriculum Innovations in Elementary Education
—Children's Literature
—Introduction to Writing Children's Books

*These courses will cover various phases of the subject matter, and titles may change to fit specific category.

515R. Special Topics in Education. (1-3:1-3:1 ea.) Home Study also.

527. Readiness and Beginning Reading. (2:2:0) Prerequisite: ElEd. 400 or teaching certificate.

533. Kindergarten Education. (2:2:0) Prerequisite: CDFR 321, ElEd. 400 or teaching certificate.

534. Innovative Practices in the Elementary School. (3:3:1)

547. Foundations in Reading K-12. (3:3:0) Prerequisite. teaching certificate or consent of instructor.

578R. Practicum in Teaching. (1-4:Arr.:Arr. ea.).
For student teaching practicum, an application for a specific assignment must be filed with the Student Teaching Office one semester before receiving an assignment. A laboratory fee of $25 is charged, payable upon application for student teaching.

600. Research Design in Education. (3:3:0) Prerequisites: graduate standing, ElEd. 620.

612R. Supervision of Student Teachers. (1-3:Arr.:Arr. ea.) Prerequisite: teaching certificate.

620. Master's Admission Seminar. (1-3:2:0) Prerequisite: teaching certificate

622. Advanced Study in Childhood Education. (2:2:0) Prerequisite. teaching certificate.
Educational theory and analysis of current practices in schools.

623. Teaching Science in the Elementary School. (2:2:0) Prerequisite: teaching certificate.

625. Teaching Social Studies in the Elementary School. (2:2:0) Prerequisite: teaching certificate.

627. Teaching Reading in the Curriculum. (2:2:0) Prerequisite: teaching certificate or consent of instructor.
Reading in the different content areas; comprehension and study skills as developed in kindergarten through grade twelve.

628. Children's Literature. (2:2:0) Prerequisite: ElEd. 340.

631. Curriculum Development in the Elementary School. (3:3:0) Prerequisite: teaching certificate.
Techniques for change, evaluation, and stabilization of curriculum.

632. Research and Literature in Reading. (2:2:0) Prerequisites: ElEd. 547 and 627.
History of reading, emphasizing research and current literature in the teaching of reading from kindergarten through grade twelve.

633. Teaching Language Arts in the Elementary School. (2:2:0) Prerequisite: teaching certificate.
Modern methods of instruction in listening, speaking, and writing, with their related skills.

635. Teaching Mathematics in the Elementary School. (2:2:0) Prerequisites: ElEd 350 or equivalent and teaching certificate.

637. Organization and Supervision of Reading Programs K-12. (2:2:0) Prerequisites: ElEd. 547, 627.

660. Research Design and Technical Writing in Education. (3:3:0) Prerequisite: Stat. 552.

680R. Internship. (2-6:0:6-18 ea.) Prerequisite: arrangement with elementary graduate coordinator prior to registration.

690R. Seminar. (2:2:0 ea.) Prerequisite: consent of instructor.

691. Doctoral Admission Seminar. (2:2:0) Prerequisite: permission of department.

693R. Independent Readings. (1-5:Arr.:Arr. ea.) Prerequisite: consent of instructor.

696R. Independent Research. (1-8:Arr.:Arr. ea.) Prerequisite: consent of instructor.

698R. Field Project. (2-4:Arr.:Arr. ea.) Prerequisite: ElEd. 600.

699R. Thesis for Master's Degree. (6-9:Arr.:Arr. ea.)

727. Curriculum of the Public Schools. (2:2:0) Prerequisite: master's degree.

751. Research Design for Doctoral Dissertation. (2:2:4) Prerequisites: doctoral candidacy and Stat. 552 or equivalent.

780R. Internship in Education. (2-8:0:6-24 ea.) Prerequisite: arrangement with elementary graduate coordinator prior to registration.

790R. Seminar. (2:2:0 ea.) Prerequisite: consent of instructor.

796R. Advanced Research. (2-4:Arr.:Arr. ea.) Prerequisite: consent of instructor.

799R. Dissertation. (6-9:Arr.:Arr. ea.) Prerequisite: ElEd. 751 or equivalent and consent of committee chairman.

Department of Instructional Science

Professors. H. Black, Bunderson (Computer Science), Clark, Merrill, Van Mondfrans.
Associate Professors. Gale, Green, G. Harrison (Chairman, W-160 STAD), Merrill, Schneider, Snow.
Assistant Professors. Brown, Card.

The Department of Instructional Science degree programs are designed to develop scientific, professional, and technological skills required to systematically improve conventional and innovative instruction systems. Skill in the design, implementation, and evaluation of management systems for the delivery of instruction such as structured texts, structured tutoring, and computer-managed systems is developed through extensive project and internship experience.

Interface management systems skills using interactive human, print electronic, photochemical, and graphic strategies are developed in laboratory and field settings; project experience is offered in church, government, university, public school, and industrial systems, with special emphasis on those employing innovatively structured texts, tutoring, delivery, and testing. The systematic approach to instructional improvement is based upon skills developed in quantitative and logical methodologies of the management, social, and informational sciences. They include information processing, measurement and evaluation, statistics, and general systems strategies. Areas of specialization include media production and management, instructional development, instructional evaluation, instructional research, and instructional psychology.

Course work offerings are specially designed for persons engaged in instructional improvement, including professors, teachers, and those involved in training in industry. These programs are designed to provide subject matter specialists with the systematic analysis, design, and technological skills for successive improvement of their instructional program.

Undergraduate Program

Undergraduate or graduate work in the areas of statistics, computer science, learning psychology, communications, and scientific management, as well as experience in instructional research and development (e.g., InSci. 490R) is excellent preparation for graduate programs. Appropriate undergraduate majors emphasizing instructional science may be designed through the University Studies Department. Undergraduate and graduate minors emphasizing instructional media, research, development, or evaluation, should be arranged through the Instructional Science Department. Academic strength and intellectual drive, not academic specialization, determine admission to department programs.

Instructional Media Certification. Certification in instructional media is available at two levels in the state of Utah. The Department of Instructional Science, in cooperation with the School of Library and Information Sciences, offers programs to meet requirements at both levels. An undergraduate minor for either secondary or elementary teachers will qualify one for the Basic Media Endorsement. A Professional Endorsement requires successful teaching experience and graduate training. Programs at the graduate level are also offered for those who are interested in industrial training and other media/library-related activities.

Graduate Program

Programs. Master of Education (M.Ed.), Master of Science (M.S.), Educational Specialist (Ed.Sp.), Doctor of Education (Ed.D.), Doctor of Philosophy (Ph.D.).

Application Consideration Dates. In addition to Graduate School deadlines, a departmental application is required. For details on application forms and deadlines, contact the Instructional Science Department secretary (W-160 STAD, 374-1211, Ext. 2635).

Entry Times. Summer Term or Fall Semester recommended.

Master of Education

Prerequisites. A valid teaching credential or appropriate professional experience.

Fields. Instructional media.

Minors Permissible. Any approved minor. Option 2.

Requirements. Minimum of 36 hours (including a minimum of 3 semester hours of internship and Stat. 501 or equivalent).

Residence. At least one full-time registration must be taken on the Brigham Young University campus.

Required Courses. Consult department.

Professional Preparation. The Master of Education degree in instructional science, emphasizing instructional media, provides preparation for mediated systems design, production, and application in education, government, church, and industry, and for the certification of persons to work in the public schools.

Master of Science: Instructional Science

Requirements. Minimum of 45 hours (including 6 hours of thesis credit and 5 hours of internship and Stat. 501 or equivalent).

Residence. Two semesters of course work on the Brigham Young University campus for a minimum of 9 semester hours.

Required Courses. InSci. 581, 582, 583, 683, 695R, 696R.

Educational Specialist

Prerequisites. A valid teaching credential or a minimum of two years of appropriate professional experience.

Fields. Instructional design and production, instructional systems management.

Minors Permissible. Any approved minor.

Requirements. Minimum of 66 semester hours; two semesters of internship.

Residence. At least two full-time semesters of registration must be completed on the Brigham Young University campus.

Required Courses. InSci. 581, 582, 583, 682, 683, 684, 685, 695R, 696R, 798R.

Doctor of Education

Prerequisites. Demonstrated competence in interpersonal effectiveness, writing skill, and quantitative skill.

Fields. Instructional design and production, instructional systems management, instructional evaluation.

Minors Permissible. Any approved minor in management, production and design, or psychology streams.

Requirements. Minimum of 82 semester hours (including 12 hours of internship, 5 hours of statistics) plus 12 hours of dissertation (and 1 hour of 690R for each semester of residence).

Residence. Six semesters of residence on the BYU campus beyond the bachelor's degree, or four semesters of residence beyond the master's degree or, as part of an approved intern program, four consecutive full-time Summer Term sessions on the BYU campus with intervening supervised field experience.

Required Courses. InSci. 581, 582, 583, 682, 683, 684, 690R, 695R, 696R, 795R, 796R, 798R.

Doctor of Philosophy

Field. Instructional science and technology.*

Prerequisites. Demonstrated competence in interpersonal effectiveness, writing skill, and quantitative skill; Graduate Record Examination.

Requirements. Minimum of 81 semester hours (including 12 hours of internship, Stat. 501 and 502, and 6 hours of 690R) plus 18 hours of dissertation.

Required Courses. InSci. 581, 582, 583, 681, 682, 683, 684, 690R, 695R, 696R, 795R, 796R, 798R.

Field. Instructional science.

Majors in instructional science may earn a Ph.D. in instructional science (jointly with psychology). This degree is designed for persons intending to have major roles in instructional system design and evaluation in universities, government training, church and public school systems, and industrial settings and who are equally committed to scientific and professional productivity. For information, contact either department.

Professional Preparation. Scholarly and professional positions in research, development, and evaluation in major universities, colleges, and educational agencies of church, government, industry, and school systems.

Instructional Science Courses

☐ **Philosophy 355. Philosophy of the Behavioral and Social Sciences.** (3:3:0)

455R. Instructional Media Production and Management. (½-3:Arr.:Arr. ea.)

Introductory course, emphasizing production and utilizing media materials and equipment.

490R. Seminar: Instructional Research Training. (1-2:1-2:0 ea.) Prerequisite: consent of instructor.

491R. Readings. (1-2:Arr.:Arr. ea.)

☐ **Computer Science 501R. Advanced Topics in Computer Science.** (3:3:1 ea.)

514R. Special Topics in Instructional Science. (1-3:1-3:1 ea.) Home Study also.

—Inexpensive Instructional Graphics
—Inexpensive Instructional Photographics
—Inexpensive Classroom Computer Applications
—Inexpensive Classroom Electronic Media
—Teaching as a Designed Performance
—Classroom Evaluation Strategies
—Learning Resource Center Management
—Writing Structured Instructional Text
—*Instructional Technology

*Title may change to fit specialized topics within this general course title.

515R. Special Topics in Instructional Science (1-3:1-3:0 ea.) Home Study also.

—Inexpensive Instructional Graphics
—Inexpensive Instructional Photographics
—Inexpensive Classroom Computer Applications
—Structured Tutorial Systems
—Inexpensive Classroom Electronic Media
—Teaching as a Designed Performance
—Classroom Evaluation Strategies
—Learning Resource Center Management
—Writing Structured Instructional Text

☐ **Communications 550.** Instructional Telecommunication Production. (2:2:2)

555. Instructional Media in the School. (3:2:3)

Foundation course surveying principles of instructional development and media production and utilization.

556. Selection and Utilization of Instructional Materials. (2:2:0) Prerequisite InSci. 555 or consent of instructor.

Variety of effective helps to selection, evaluation, and utilization.

☐ **Psychology 560. Learning Theory.** (3:3:0)

☐ **Psychology 562. Cognitive Processes.** (3:3:0)

565. Instructional Media Production. (2:1:3) Prerequisite: InSci. 555 or consent of instructor

Processes for preparing instructional materials. Producing materials using selected processes.

566. Photography in Instruction. (2:1:3) Prerequisite: InSci. 555 or consent of instructor.

Processes, techniques, and equipment for preparing photographic instructional materials.

567. Art and Graphic Processes in Instruction. (3:2:3) Prerequisite: InSci. 555 or consent of instructor.

Preparing instructional materials using art and graphic processes.

568. Electronic Audio and Video Production. (2:1:3) Prerequisite: InSci. 555 or consent of instructor.

Design, production, management, and validated instruction of electronic audio and video amplification and control systems.

☐ **Psychology 570. Computer Use in the Behavioral Sciences.** (3:3:6)

579. Evaluation and Criterion Assessment. (3:2:1)

580R. Proseminar in Instructional Science Inquiry. (1-3:1-3:0)

Inquiry findings and supporting quantitative methods, including computer-assisted strategies for generating, modeling, and analyzing data for both managerial and theoretical purposes.

581. Theoretical Research. (3:3:0) Prerequisite: Stat. 501 or equivalent.

Research design, methodology, data analysis, inferential strategies, and scientific report writing to develop improved instruction.

582. Foundations in Evaluation. (3:3:0) Prerequisite: Stat. 501 or equivalent.

Designing valid instructional measurement instruments and data analysis systems; identifying values and formulating data-based prescriptive evaluations.

583. Instructional Systems Design. (3:3:0) Prerequisite: Stat. 501 or equivalent.

Assessing needs, analyzing tasks, designing presentation and evaluation subsystems, producing phototypes, and validating empirical systems.

584. Instructional Display R&D. (3:3:0)

585. Instructional Management R&D. (3:3:0)

600. (InSci.-EdPsy.) Research Design and Critical Analysis in Educational Psychology. (3:3:0) Prerequisite: Stat. 552 or equivalent.

660. Management of Instructional Media Systems. (2:2:0) Prerequisite: InSci. 555 or consent of instructor.

Managing people, materials, equipment, and facilities to utilize instructional media.

670. Advanced Design and Production of Instructional Materials. (2:2:1) Prerequisite: InSci. 555 or consent of instructor.

Design, development, and evaluation, emphasizing individual projects.

☐ **Psychology 678. Measurement Theory.** (3:3:0)

679. Measurement and Evaluation. (3:3:0)

681. Theoretical Research in Instructional Theory 2. (3:2:4)

Experimental research methods, design, instrumentation, and reporting, including conducting and authoring publication-quality research testing instructional theory.

682. Evaluation Theory and Practice. (3:2:1)

Strategies for evaluation from a theoretical and practical viewpoint; emphasizing empirical, interpersonal, and value-oriented aspects of evaluation.

683. Advanced Instructional Systems R&D. (3:3:2) Prerequisites: InSci. 583 or consent of instructor.

Advanced laboratory in instructional system design, production, formative evaluation, packaging, and implementation. Systematic critical analysis of all phases of development.

684. Instructional Development 3. (3:3:0)

Analytical approaches to instructional design and the formulation of instructional theory.

685. Instructional Systems Management R&D. (3:3:0)

Systems theory and analysis applied to instructional systems. Topics include implementation, operations management, and R&D management.

690R. Professional Topics Seminar. (½-1:1:Arr. ea.)

Evaluation systems, representation (conceptual and perceptual) systems, implementation and management systems, general systems.

691R. Readings in Instructional Science. (1-5:Arr.:Arr. ea.) Prerequisite: consent of instructor.

695R. Professional R&D Internship. (½-3:Arr.:Arr. ea.)

System evaluation projects, representation system projects, implementation and management projects, general integrated system projects.

696R. Professional Product R&D. (½-3:Arr.:½-9 ea.) Prerequisite: consent of instructor.

Instructionally validating professional-level products. Topics include evaluation systems, representative systems, implementation systems, general systems.

699R. Master's Thesis. (1-9:Arr.:Arr. ea.)

790R. Theoretical Topics Seminar. (½-1:1:Arr. ea.) Prerequisite: consent of instructor.

General system evaluation, representation (conceptual and perceptual), and implementation and management theories.

795R. Theory R&D Internship. (½-3:Arr.:Arr. ea.) Prerequisite: consent of instructor.

Evaluation, representation, implementation and management, and general system theory development.

796R. Theoretical Product R&D. (½-3:Arr.:1½-9 ea.) Prerequisite: consent of instructor.

Emphasizing publication-oriented theory-testing research. Topics include theoretical investigation, general systems, evaluation, representation, and implementation and management.

798R. Advanced Product R&D. (½-6:Arr.:Arr. ea.) Prerequisites: InSci. 696R and 698R or equivalent.

Instructional product(s) satisfying professional and/or scientific client criteria. Sections include theory, evaluation systems, representation systems, and management systems.

799R. Doctoral Dissertation. (6-9:Arr.:Arr. ea.) Prerequisite: InSci. 796R or equivalent.

Department of Secondary Education and Foundations

Professors: Alley, Baird, Belt, Holder, Muse, Wilcox.
Associate Professors: W. Allred (Chairman, 111 MCKB), Coombs, Grossen, Kay, Shute, Thomson, Webb.
Assistant Professor: Arnoldsen.
Instructor: Henderson.

Undergraduate Program

The New Secondary Certification Program is now fully implemented. Consult the college advisement center (4 JSB) for any necessary clarification.

All prospective secondary teachers are encouraged to affiliate with the Student Education Association (SEA) during the time they are pursuing certification.

1. **General Education.** See the general education programs section of this catalog.
2. **An Approved Teaching Major and Minor, or Composite Teaching Major** (see following pages). Although a minor is no longer required for graduation from the University, recommendation for certification requires the successful completion of an approved teaching major **and** minor, **or** a composite teaching major.
3. **Professional Education.** The following courses and experiences fulfill the state requirements for profes-

sional education. The first course (SecEd. 276) is team taught by members of the academic disciplines and members of the Secondary Education and Foundations Department. This course should be taken during the sophomore year whenever possible. The balance of a student's program will be largely determined as a result of the performance in SecEd. 276.

The new sequence is as follows:

	Hours	
SecEd. 276	4	
SecEd. 376R. (to be selected from a series of minicourses upon advisement)	5	(minimum)
SecEd. 476 (emphasis on field-centered activities in the public schools)	16	

Note: Students will be pretested in SecEd. 276 for Health 362 concepts and counseled on the basis of the test results.

Prerequisites for Student Teaching

1. A total college cumulative grade-point average of 2.25 or higher is required, or a BYU cumulative grade-point average (with not fewer than 32 semester hours completed) of 2.25 or higher.
2. Completion of at least 15* semester hours in the teaching major and 10* semester hours in the teaching minor, or 25* semester hours in the composite teaching major.
3. Application for certification in the Teacher Clearance Office (TCO).
4. A clearance check by the academic department.
5. Successful completion of SecEd. 276 and appropriate SecEd. 376 modules.

***Note:** Some academic departments require completion of more than the listed minimum prior to clearance for student teaching.

Certification Procedures

Students must not assume that certification is automatic once item 5 above has been completed. Students have the responsibility to keep the TCO informed regarding progress toward certification. Any deviation from the certification program outlined in this catalog must be approved by both the academic department chairman and the chairman of the Department of Secondary Education and Foundations in the College of Education. It is the student's responsibility to arrange for the preparation and circulation of the necessary memoranda initiating such action.

To avoid any undue delays concerning certification, students should arrange for a personal review of their TCO file well in advance of registration for their final semester. Completion of **graduation** requirements does not necessarily mean that **certification** requirements have been met.

Preparation of Teachers of Indians—Secondary

Students seeking secondary certification are required to have an approved academic teaching major and minor selected from the list contained in this section of the catalog. A new minor in Native American Studies has been approved for students interested in learning more about the heritage of the American Indian. This minor is **not** a teaching minor to be used in the certification program, but it would be beneficial to many educators who, because of their professional assignments, will interact with native Americans and/or programs related to these people.

Preparation of Seminary and Institute Teachers

Students who are interested in qualifying for teaching seminary and institute should meet the following requirements in addition to those for regular certification above:

1. Recommended secondary certification for teaching in the student's choice of fields (see list below).
2. Completion of the following courses:
   Religion
   370 (2) Introduction to Religious Education
   471 (2) Teaching the Scriptures
3. Student teaching in seminary one hour per day for a specified number of weeks. (Note: This does not count toward the student teaching requirements for state certification.)
4. Recommended completion of the following courses:
   Religion
   121, 122 (2 ea.) Introduction to the Book of Mormon
   211 (2) The New Testament
   301 (2) The Old Testament
   341 (2) Latter-day Saint Church History to 1846

Interested students should contact the Office of Seminaries and Institutes for specific information.

Teaching Majors, Minors, and Composites

To qualify for certification, a student must complete an acceptable teaching major and minor **or** a composite teaching major.

The teaching major and the teaching minor consist of designated courses in subjects taught in Utah secondary schools. The majors and minors are determined cooperatively by the different academic departments and the Department of Secondary Education and Foundations in the College of Education. Programs have been approved in the following areas as teaching majors and/or minors (please note exceptions):

Secondary School Subjects Acceptable as Teaching Majors

Art
Chemistry
Communications*
Economics +
English
English as a Second Language
French
Geography +
Geology +
German
Health
History
Latin*
Mathematics
Physical Education
  a. Sports
  b. Dance
Physics
Political Science
Psychology
Russian*
Sociology
Spanish
Speech
Theatre Arts

Subjects and Service Areas Acceptable as Teaching Minors

Any of the subjects listed above as majors, and
  Computer Science and Statistics (with
    Mathematics major only)
  Driver and Safety Education
  Instructional Media
  Recreation Education

Note: (1) Subjects marked with an asterisk (*) are not commonly taught in Utah public schools. If a subject so marked is presented as a teaching major or a teaching minor, a subject not marked with an asterisk **must** be used to support it.
(2) Two subjects marked with the symbol + are not to be used in a major-minor combination. (Job opportunities are essentially nil with such related areas.)

Areas Acceptable as Composite Teaching Majors

A composite teaching major consists primarily of work in three subjects in the same general field. One subject is designated as the dominant subject and the other two are designated as related subjects. For guidance in selecting and completing a composite teaching major, students must consult with the Teacher Clearance Office (TCO), whose responsibility it is, under cooperative advisement with the academic departments, to administer composite majors.

The following general fields may be used for composite teaching majors:

Art
Biology
Business Education
  Distributive Education
  Secretarial—Office Administration
  Socio-Business
Earth Science
Health and Physical Education
  Dominant: Physical Education, Health Education, and one related field
  Related: Dance, Driver and Safety Education, Recreation Education
Home Economics
Humanities
Industrial Arts
Language Arts
  English
  Journalism
  Speech
  Theatre and Cinematic Arts
Music
Physical Science
  Chemistry
  Geology
  Mathematics
  Physics
Social Sciences
  Dominant: Geography, History, and one related field
  Related: Economics, Political Science, Psychology, Sociology

Courses Required for Teaching Majors, Teaching Minors, and Composite Teaching Majors

Art

Composite Teaching Major (64-hour list)

Foundations (10 hours)
  ArtDs. 116, 117
Graphic Fundamentals (9 hours)
  ArtDs. 241R, 327R, 333R, 350R; Physics 177
Plastics Fundamentals (6 hours)
  ArtDs. 356R, 359R, 361R
Art History (12 hours)
  ArtDs. 311, 312 (to precede other art history classes)
Design Fundamentals (3 hours)
  ArtDs. 320R, 420R
Dominant and Supporting Fields

Each student will complete 12 semester hours in one of the three following groups as a dominant field of study and 8 semester hours in each of the other two groups as supporting fields:

A. Drawing	ArtDs. 321R, 322R, 421R, 422R, 427R, 428R, 433R, 450R
Painting:	ArtDs. 427R, 428R, 518
Printmaking:	ArtDs. 350R, 450R
B. Plastics Field:	ArtDs. 456R, 458R ArtDs. 459R ArtDs. 461R, 462R
C. Graphics Field:	ArtDs. 341R, 342R, 441R, 494R ArtDs. 336R, 436R IntEnv. 237, 238 Comms. 263, 264, 368R

Basic Teaching Major (43-hour list)

Foundations (10 hours)
  ArtDs. 116, 117 taken in sequence
Graphics Fundamentals (9 hours)
  ArtDs. 241R, 327R, 333R, 350R, Physics 177
Plastics Fundamentals (6 hours)
  ArtDs. 356R, 359R, 361R
Electives (6 hours)
  ArtDs. 341R, any 400-series courses for which prerequisites have been satisfied, or communications photography.
Art History (12 hours)
  ArtDs. 311 and 312 to precede other art history courses.

Teaching Minor (20-hour list)

ArtDs. 116, 117, 311 or 312, and 333R or 241R or 350R or 356R or 359R.

Biology

Composite Teaching Major (45-hour list)

Students majoring in botany or zoology who wish to certify as secondary school biology teachers may do so by completing the required courses for the biology composite teaching major as outlined below and SecEd. 276, 376, and 476. No grade less than C- will be accepted toward the fulfillment of these requirements.

Required Courses in Biology

Bot. 105, 205, 370, and 440, Bot.-Zool. 201; Micro. 321 and 322; Zool. 260 and 261 or 460 and 461; Zool. 331, 344, 350, and 371 (or Bot. 372); Geol. 101 and 102; Chem. 102, 103, and 281 or 105, 106, and 252; Math. 105; Physics 137.

Required courses in chemistry, geology, mathematics, and physics may be used to fill general education requirements in these areas.

Recommended Courses in Biology

Bot. 210, 250, and 321; Zool. 202, 317, 325, and 576.

Recommended Supporting Courses in Other Areas

Any of the following supporting courses may also be used to fill requirements in general education.

Math. 110 and 109; Physics 105, 106, 107, and 108 (or 201 and 202); Geol. 103; InSci. 455 and EdPsy. 501; Health 362.

Business Education

Composite Teaching Major (51-hour list)

Core Requirement: Math. 110, Acctg. 201, Econ. 110, ComSci. 133A, Acctg. 203.

Departmental Requirement: Acctg. 242; BusEd. 320; BusMgt. 241 or 341; 201, 301, or Econ. 353.

A. Distributive Education
The following courses will be required to satisfy the composite major requirements of business teachers majoring in business education with a distributive education emphasis:

Acctg. 201*, BusMgt. 241, 256; Comms. 230; Econ. 110; OrgB. 321; plus 10 hours of electives (see secretary, 351 JKB).

B. Secretarial-Office Administration
The following courses will be required to satisfy the composite major requirement of business teachers majoring in business education with a stenography-office administration emphasis:

Acctg. 201*, 202*; BusEd. 113, 203, 204*, 305, 311*, 370*, 489.

C. Socio-Business
The following courses will be required to satisfy the composite major requirement of business teachers majoring in business education with a socio-business emphasis:

Acctg. 201*. 202*, 356, BusEd. 203*, 305, BusMgt. 200; Econ. 212 or 300. In consultation with and approval of major adviser, students will select additional courses from the following areas to make a total of 51 hours in their major: business education, accounting, management, economics, organizational behavior, computer science, plus 6 hours of electives (see secretary, 351 JKB).

*Must be completed before student teaching.

Chemistry (No D credit counted)

Teaching Major (30- to 32-hour list)

Chem. 111, 112, 113, 114 (or 105, 106, 223), 351, 352, 353 (2 hours), 461, 462, 464, and 481, 514, or 521.

Teaching Minor (18- to 19-hour list)

Minor, Dominant, or Related Subject: Chem. 111, 112, 113, 114 (or 105, 106, 223), plus any of the following sequences: Chem. 351, 352, 353 (2 hours); or Chem. 461, 462, 464; or Chem. 252, 481.

Computer Science and Statistics

Teaching Minor (19- to 20-hour list)
(To be used only in conjunction with a mathematics teaching major.)

Required: 9 hours in computer science and 8 hours in statistics with a 2- or 3-hour elective in either area.
Required courses: ComSci. 131, 231, 330; Stat. 221 or 321, 241, 336 or 330.
Elective (2 or 3 hours): (a) Any computer science course **except** ComSci. 110, 120, 233; or (b) any statistics course **except** Stat. 221, 321, 330, 332, 336, 501, 552, 554.

Driver Safety Education (16-hour list)

Teaching Minor
(See course requirements under Health Sciences.)

Economics

Teaching Major (30-hour list)
Thirty semester hours, at least 8 of which must be from courses numbered 500 or above, including the following: Econ. 110, 315 or 515, 410, 411, 487 or 488, and 594R. (Math. 113 or 142 may be counted for 3 of the 30 hours.)

Teaching Minor (15-hour list)
Econ. 110, 301 or 411, 300 or 410, and 6 additional hours numbered above 301.

Earth Science

Composite Teaching Major (61-hour list)
All students majoring in earth science who wish to obtain a teaching certificate must take the 52-hour composite emphasis. These hours must include the courses listed below, with a minimum in each group as follows*: 20 hours in geology, 12 hours in physics, 8 hours in chemistry, 4 hours in mathematics, 5 hours in geography, 7 hours in zoology, and 5 hours in botany. Courses are to be selected from the following list: .

Geol. 111, 112, 310, 311, 312, 313, 351, 352, 410, 411, 460, 470, 480, 502* (Geol. 104 is an acceptable substitute for 111 if 102 is also taken.)
Physics 127, 137, and either 100, 110, or 121, 122; or 201, 202.
Math. 109, 110, 112, and 113
Chem. 105, 106
Geog. 101, 211, 401, 405
Zool. 105, 344*, 201, 202, 203
Bot. 101, 105, 205*, 210

***Note:** Prospective earth science teachers are required to take these courses. Check the general education programs section of this catalog to see which courses will fill general education requirements.

English

Teaching Major (35-hour list)
Engl. 301 plus one course from 371, 372, 373; **or** Engl. 382 plus two courses from 371, 372, 373; Engl. 302 plus one course from 374, 375, 376; **or** two courses from Engl. 374, 375, 376; Engl. 362 plus 361 or 363; Engl. 320; Engl. 321 or 322 or 421; and acceptable electives to total at least 35 hours (Engl. 377 and 479 and other professional certification courses may not be counted).

Teaching Minor (20-hour list)
Minor, Dominant, or Related Subject. Engl. 301, 302, 303, 320, 321 or 322 or 421, additional English courses to total at least 20 hours; and Engl. 377 (to be completed before student teaching).

Note 1: All English majors and minors must take Engl. 251 as a prerequisite.

Note 2: The teaching major must complete Engl. 377 and 479 or their equivalents within the SecEd. 276, 376R, and 476 sequence of professional courses outlined by the College of Education.

Note 3: See English section of this catalog for further clarification.

Teaching English as a Second Language (Graduate Program Only)

Teaching Major for Certification (34-hour list)
ESL 527, 528, 583 or CompLit. 310, Ling. 325 or 528 or Engl. 321 or 529, a culture course such as Anthro. 320, 330, 340, 350 or Spanish 445, plus sufficient hours from among the following to make a total of 30 hours: Ling. 423, 426, 528, 531, 590R; Psych. 561; ESL 581, 594, 585R; or approved course work in instructional psychology, educational psychology, or English.

Teaching Minor (20-hour list)
ESL 477, 527, 528, 583 or CompLit. 310, Ling. 325 or Engl. 321 or Engl. 325 or Engl. 422, plus 5 hours from among the following: Ling. 528 or Engl. 529, Ling. 423, ESL 581, 585R.

Note 1: M.A. candidates and TESL graduate certificate candidates will be allowed to take ESL 577 and 579 in lieu of Engl. 377 and Engl. 479.

Note 2: Foreign students who need additional training in English will be required to take ESL 201.

Note 3: The Education Department has recently initiated a program whereby students are able to pursue course requirements in ESL 577, 578, and 579 while completing SecEd. 476 (16-hour student teaching block). Students need to counsel with an adviser to effect this correlation of course work as well as to determine course work that will be included in the new SecEd. 276 (4) and 376R (5) courses.

French

Teaching Major (31-hour list)
French 201, 301, 321, 322, 326, 411, 441, 442, 443, 444, and 445.

Teaching Minor (20-hour list)
French 201, 301, 321, 326, 440, plus two or more courses chosen from 211, 311, 429, 445.

Note 1: Teaching majors and minors who do not demonstrate adequate proficiency in speaking the language will be expected to enroll for French 211 and 311. All teaching majors and minors in French must take French 377 prior to student teaching

Note 2: Classes up to and including French 201 may be waived for students who demonstrate proficiency in the foreign language. The department chairman will attest to such proficiency in a written statement to the Teacher Clearance Office.

Geography

Teaching Major (32-hour list)
Geog. 101, 102, 120, 211, 231, 450 or 451, 504, 598, and 13 additional hours to be selected after consultation with a geography adviser.

Teaching Minor (20-hour list)
Minor, Dominant, or Related Subject: Geog. 101, 120, 211, 231, 450 or 451, 501, plus 3 elective hours.

Geology

Teaching Major (30-hour list)
Geol. 111, 112, 311, 351, 352, 502; and 11 hours selected from 411, 460, 470, 480, 510, 512, (Geol. 312, 313, and 410 can be used as a 7-hour block of the required 11 hours.)

Teaching Minor (20-hour list)
Minor, Dominant, or Related Subject: Geol. 111, 112, 305, 502, and 8 hours selected from 411, 460, 480, 510. (Geol. 104 is an acceptable substitute for 111 if 102 is taken also.)

German

Teaching Major (34-hour list)
German 201, 301, 321, 322, 326, 377*, 401, 429, 442, totaling 22 hours. At least 12 hours or four of the following courses must be chosen: 423, 441, 442, 443, 444, 495R, and Ling. 325.

*377 is required, but does not count as part of the German teaching major.

Teaching Minor (20-hour list)
German 201, 301, 311, 321, 326, 401, 377. German 440 is strongly recommended for those who have had extended residence in a German-speaking country.

Note 1: Students planning to do all or part of their student teaching in German must take German 377 in advance; however, German 377 may be waived for those students who have had this course in another foreign language.

Note 2: Teaching majors who have not had foreign residence experience or who have not participated in the Semester in Salzburg program will enroll for German 211 and 311.

Note 3: German 201, 211, 301, and 311 may be waived for students who have had residence experience in German-speaking countries and who demonstrate proficiency in German. The department chairman will attest to such proficiency in a written statement to the Teacher Clearance Office.

Health Sciences

Teaching Major (32-hour list)
Health 325, 370, 381, 421, 431, 451, 460. Also the following courses or equivalent from other departments: FSN 115, Zool. 260, 261; Psych. 321; and at least 6 hours from the following elective courses: Health 370, 465, 501R or 503R, 552, 561, 660; Micro. 311; Sociol. 360.

The student program is to be established through consultation with an adviser from the Department of Health Sciences.

Teaching Minor (20-hour list)
Health 370, 381*, 421, and 460; FSN 115; and 9 hours selected from the following courses: Health 325, 430, 451, 465, 501R or 503R, 561; Micro. 311; Psych. 321.

*If required in student's major program, the health sciences education major will be 17 hours.

Driver and Safety Education Minor—Related (16-hour list)
Health 121 or 430, 325, 444, 445, 446, and 4 hours selected from the following courses: Health 460, 502R, 515; Psych 321. The students' programs must be approved by their Health Science Department adviser.

History

Teaching Major (35-hour list)
Required: Hist. 100, 110, 111, 170, 270, 466, 490.
Recommended: 488, plus sufficient hours from the list below to bring the total up to 35 hours.

Teaching Minor (20-hour list)
Minor, Dominant, or Related Subject: Hist. 110, 111, 170, 270, 466, plus sufficient hours to bring total up to 20 hours.

Approved courses:

Hist. 300, 302, 304, 307, 310, 311, 312, 313, 320, 322, 323, 326, 327, 329, 330, 331, 332, 333, 334, 335, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 351, 352, 370, 372, 375, 377, 378, 379, 412, 415, 424, 425, 429, 433, 435, 436, 440, 445, 453, 454, 455, 457, 459, 460, 462, 463, 465, 467, 469, 471, 472, 473, 474, 475, 476, 477, 490, 497R, 498R; Geog. 451; Econ. 374.

Home Economics Education

Composite Teaching Major (52- to 54-hour list)
HomEc. 101, 375, 489; CDFR 210, 422, 360 (one of 361, 445, 461); Nurs. 425; FSN 235 and 236, 264 and 265, 340 or 374; Int. Env. 240; FRM 220, 335 and 336, 370 (2-3 hours from 240, 260, 360); CloTx. 165, 260 (2-3 hours from 110, 235, 300; and 2-3 hours from 110, 235, 300, 355). Please consult a Department of Home Economics Education adviser, for selection of a suitable program.

Humanities

Composite Teaching Major (56- to 58-hour list)
Humanities majors must select one of the following dominant fields:
English: 20-hour list.
Foreign Language: 20-hour list in either German, Russian, French, Spanish, or Latin. Students selecting foreign language as the dominant area must complete 12 hours of literature courses on the 400 (senior) level.

In addition to the dominant field, all humanities majors must complete the following:

English: 6 credit hours of literature courses (for students with a foreign language dominant area).
Foreign Language: 6 credit hours of literature in 400 (senior) level (for students with English dominant area).
History: 6 credit hours
Humanities: 12 credit hours, including Hum. 201, 202, 490, plus either 240 or 261.
Music: 5 credit hours, selected from Music 101, 103,484, 485.
Philosophy: 6 credit hours.

In those areas where specific courses are not listed, the students must clear with their adviser in the Department of Humanities and Comparative Literature.

Industrial Education

Composite Teaching Major

***Core List:** All students must take the following courses: DesTech. 111, Indus. 100, 101, 129, 240, 250, and 289.

Technical Depth Area: An additional 23 semester hours must be selected from the following technical areas. Junior high teachers must have classes from a minimum of four areas. Senior high teachers must have a minimum of 6 hours from two areas.

Crafts: Indus. 160, 260, 319, 360, and 365.
Design Technology: DesTech. 211, 212, 256, 310, 355, 410, and 436.
Electronics: ElecTech. 102, 103, 221, 232, and 235.
Graphic Arts: Indus. 351, 451, 452, 453, and 454.
Metals: Indus. 130, 139, 329; MfgTech. 331, 335, and 337.
Plastics: Indus. 300, 440; MfgTech. 360 and 431.
Power-Auto: Indus. 189, 387, 388, 389, and 489.
Woods: Indus. 105, 200, 210, 300; BldgTech. 211, 301; and MfgTech. 337.

***Professional Indus.:** Indus. 291R, 315, 325, 405, 470, 491R, and 540**.

***Professional Ed.:** SecEd. 276, 376R, 476; and Health 362.

Technical Teacher Education

This curriculum is designed to prepare teachers for technical and industrial programs in high and post-high school institutions. Admittance to the program requires approval of the department, a minimum GPA of 2.25, and either the Associate of Science degree in a technical area or completion of the courses for the associate degree.

***Core List:** Indus. 100, 101, 129, 240, 250, 289, and DesTech. 111.

Technical Area: An associate degree or an approved program for an associate degree in a technical area. Additional courses must be selected from the technical depth area. The core class in the technical area may be deleted.

***Professional Indus.:** Indus. 315, 325, 405, 470, and **540.

***Professional Ed.:** SecEd. 276, 376R, 476; and Health 362.

*Required.

**May receive graduate credit if approved to be taken last semester.

Instructional Media

Teaching Minor (16-hour list)
To be selected from the following courses: InSci. 455R, 555, 556, 565, 566, 567, 568; LIS 430, 513, 523, 528, 539, 557, 567, 662; ElEd. 340, 628; Engl. 420. This minor **does not** automatically give instructional media certification for the State of Utah. In order to be certified, students must demonstrate proficiency in the following areas: cataloging and classification of instructional materials, selection and utilization of media materials, media production, and media administration. Those desiring this media endorsement should consult with an adviser prior to initial registration.

Journalism (Communications)

Teaching Major (32-hour list)
Comms. 101, 211, 230, 255, 307, 312, 323, 480; 7 hours selected from Comms. 263, 272, 335, 338, 340, 346, 347, 365R, 420, 427, 434, 528, 550, ThCA 117R. (An internship, Comms. 495R, may be substituted for Comms. 323.)

Teaching Minor (20-hour list)
Minor, Dominant, or Related Subject: Comms. 101, 211, 312, 323, 480; 5 hours selected from Comms. 201, 230, 255, 263, 307, 335, 420. (An internship, Comms. 495R, may be substituted for Comms. 323).

Latin

Teaching Major (32-hour list)
Latin 201, 301, 321, 322, 431, 432, 441, 442; ClCiv. 331R and 341; and one course from Latin 429, 561, or 621.

Teaching Minor (20-hour list)
Latin 201, 301, 321, 431 or 432, 441 or 442, 490R; ClCiv. 341.

Mathematics

Teaching Major (32-hour list)
Required: (a) Math. 112, 113, 214; or Math. 141, 142, and 344. (b) Math. 301, 302, 343, 371.

Electives: A minimum of 9 semester hours selected from Math. 300, 311, 315, 332, 372, 387, 451, 452, 501, 502, 508, 541, 542, 551, 552.

Teaching Minor (20-hour list)
Math. (a) 112, 113, 214; or Math. 141, 142, 344; (b) Math. 301, 302, 343.

Music Education

Composite Teaching Major (67-hour list)
Music 103*, 165 (for voice specialty only), 195, 196, 200R, 203, 295, 296, 363**, 364**, 367, 368, 370, 372, 374, 375, 376, 377, 378, 471, 481, 484*, 485*; complete 6 hours of ensemble, 12 hours of private instruction in the student's applied specialty, and pass a piano proficiency requirement equivalent to four semesters of piano before student teaching.

Note: Please refer to Department of Music requirements in this catalog for recital and ensemble requirements.

*These courses are included in general education.

**For students with instrumental specialties only. Those students taking voice as a specialty should take Music 566R instead of Music 363 and 364.

Physical Education

Teaching Major (36-38½ hours)

Sports: All students must complete the core courses and those listed for either men or women.

Core (19 hours)
PE 233, 236, 238, 240, 279 or 280, 330, 340*, 341*, 344*, 378, 446*.

Men (25 hours)
PE 231, 232, 234, 235, 237, 239, 464; two of the following: 370, 371, 372, 373, 374; and 10 credits from the following: 250, 264, 265, 279 or 280, 314, 370, 371, 372, 373, 374, 406, 411, 449, 474R, 547, 570, 571, RecEd. 570, Health 381.

Women (20-22 hours)
PE 108, swimming (1 hour), 241, 242, 243, 244, 245, 246, 247, 248, 249, 375 or 376, 388, 407 or 474R, 461; 5 hours selected from Health 430, 381; PE 314, 449; YthLdr. 378; CDFR 130.

Dance: Students must complete core courses and all courses listed in either the dance emphasis (men or women) or dance specialization.

Core (29.5 credit hours)
PE 180, 181, 202, 279 or 280, 287*, 288*, 330, 341*, 344*, 378*, 380, 382, 383, 387, 388, 389, 446, 486.

Dance Emphasis—Women (8½ credit hours)
PE 375 or 376; 6 hours of the following: 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 372, 373.

Dance Emphasis—Women (8½ credit hours)
PE 108, 375, or 376; 6 hours from the following: 233, 236, 238, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249.
Dance Specialization (7 credit hours)
PE 108, 183, 209, 480, 481, 490, 587R.

*Course has prerequisites.

Teaching Minor (20 hours)

Dance Specialty: Both men and women complete courses as listed. PE 180, 181, 185, 187, 279 or 280, 286, 287, 288, 330, 380, 383, 387, 388, 389, 486.

PE 378 must be successfully completed if a physical education dance specialty minor is to be assigned to student teaching in this minor.

Sports Secondary Certificate (19-20 hours): Students may minor in physical education by completing all core courses and the course (requirements for either men or women.

Core (10 credit hours)
PE 279 or 280, 330, 341*, 344*.

Men (9 to 10 credit hours)
PE 235; 2 hours from the following 231, 232, 233, 234, 236, 237, 238, 239, 240; two of the following 370, 371, 372, 373, 374; one of the following. 314, 340, 446, 464.

Women (10 credit hours)
Swimming (1 hour), PE 376; 7 hours from the following: 108, 233, 236, 238, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249 PE 378 must be successfully completed if a PE sports emphasis minor is to be assigned to student teaching in this minor.

Coaching (20-hour minor): Students must complete core requirements and those listed for either men or women.

Core: PE 341*, 344*, 378, 411, 449
Men. 2 credits from 231-240; 4 credits from 370-374, 406.
Women: 3 credits from 233-249. 264. 265; 3 credits from 463, 472R, 570, 571; 407 or 474R.

*Course has prerequisites.

Physics

Teaching Major (28-hour list)
Physics 121, 122, 214, 221, 222, 300, and an additional 12 hours (9 of which should be upper division) chosen from 127, 137, 280, 317, 321, 341, 380, 381.

Teaching Minor (16-hour list)
Minor, Dominant, or Related Subject: Physics 121, 122, 214, 221, 222, 300.

Political Science

Teaching Major (30-hour list)
Required introductory courses: PolSci. 110, 150, and 170.

Required upper-division courses: PolSci. 300 (normally taken before other upper-division courses), 302.

Electives to complete the major should be balanced among the following fields, selected in consultation with an adviser: political theory and philosophy—301, 307; American political system—310, 311, 312, 313, 314, 315, 319R, 329R, 330, 339R, 360, 361, 363, 364, 368; comparative political systems—350, 351, 352, 353, 354, 355, 356, 357, 358, 359R, 370, 373, 375, 378, 381, 382, 383, 384R, 386, 499.

Teaching Minor (20-hour list)
Required introductory courses: PolSci. 110, 150, and 170.

Required upper-division courses: PolSci. 302 and other 300-level elective courses balanced among the fields listed above.

Psychology

Teaching Major (30-hour list)
Psych. 111, 321, 369 (or 373 and 374), 491R or 497; one of the following: 240, 440, or 445; and three of the following courses: Psych. 360, 365, 450, 460.

The remaining credit hours must be selected from the following: Psych. 211R, 320, 322, 330, 336, 350, 357, 360, 365, 369, 373, 374, 378, 450, 454, 460, 491R, 495R, 497.

Teaching Minor (20-hour list)
Minor, Dominant, or Related Subject: Psych. 111, 321, 369, and one of the following: 440, 445, or 450.

The remaining credit hours must be selected from the following: Psych. 211R, 240, 320, 322, 330, 336, 350, 357, 360, 365, 373, 374, 378, 450, 454, 460, 491R, 495R.

Recreation Education
RecEd. 407, 480R, 505—required.
For additional information, obtain an outline in 273-B Richards Building.

Russian

Teaching Major (31-hour list)
Russian 201, 301, 311, 321, 322, 326, 345, 411, 412, 441, 442.

Teaching Minor (21-hour list)
Russian 201, 301, 311, 321, 326, 340R, 345.

Note 1: It is strongly recommended that teaching majors take Ling. 325. Both teaching majors and minors must take Russian 377 or an equivalent foreign language methods class prior to student teaching.

Note 2: Classes up to and including Russian 301 may be waived for students who demonstrate proficiency in the foreign language. The department chairman will attest to such proficiency in a written statement to the Teacher Clearance Office.

Sociology

Teaching Major (33-hour list)
Sociol. 111, 205, 211, 300, 320, 350. Required: 112, 330, 380, 526.

The remaining hours are to be selected from the following: Sociol. 115, 223, 245, 352, 357, 370, 381, 383, 389, 411, 412.

Teaching Minor (20-hour list)
Minor, Dominant, or Related Subject: Sociol. 111, 112, 330, 526. The remaining hours are to be selected from the major list above, preferably from the required courses.

Spanish

Teaching Major (32-hour list)
Spanish 201*, 301*, 321, 322 or 439, 326, 441, 445, 451, 455, plus 4 credit hours selected from the following: 311***, 322 or 439, 345R, 427, 454, 458, 470R, 485, 490R, 520, 522, 556, 580R or 584.

Teaching Minor (21-hour list)
Spanish 201*, 301*, 321, 326, 377**, 441 or 451, 445 or 455, and an additional 2 hours from the 400- or 500-level courses listed under Teaching Major.

***Note:** Classes up to and including Spanish 301 may be waived for students who demonstrate proficiency in the foreign language. The department chairman will attest to such proficiency in a written statement to the Teacher Clearance Office.

****Note:** Spanish 377 is required for minors and must be taken prior to student teaching. It is a requirement for certification but does not count as language credit. This requirement will be waived for students majoring in another language who have had the course in that language.

*****Note:** It is strongly recommended that teaching majors and minors who have not had foreign residence or who have not participated in a semester abroad program take Spanish 311. This course may not be counted for elective credit by natives or returned Spanish-speaking missionaries.

Speech Communication Education

Teaching Major (35-hour list)
Core Classes: Comms. 100, 101, 102, 111, 130, 305, 480.

Required for Teaching Emphasis: Comms. 330, 371, 377*, 401, 403, 492.

Electives from the following (2 hours): Comms. 301, 310, 311, 315, 395R, 410, 494.

Teaching Minor (23-hour list)
Comms. 100, 101, 102, 111, 130, 305, 371, 377*, 492.

*Comms. 377 must be taken prior to student teaching.

Theatre and Cinematic Arts Education

Teaching Major (37 hours)
ThCA 115, 123, 124R, 126R, 319, 320, 325, 360, 361R, 362, 371, 377R, 461R*, and 464 or 465.

Teaching Minor (21 hours plus ThCA 377R)
ThCA 123, 124R, 126R, 319, 320, 361R, 371, and 461R*. ThCA 377R is also required for minors. Recommended but not required are ThCA 115 and 121.

*Junior or senior status required for these classes, which must be taken in sequence.

Prerequisites for ThCA 361R: ThCA 121, 123 or 124, 319, 320, and major production experience or equivalent. Prerequisite for ThCA 461: ThCA 361R or equivalent.

Graduate Program

Certification for Graduate Students

Students who have received a degree in an academic area, and who wish to obtain a secondary teaching certificate, should contact the Teacher Clearance Office for specific information.

Programs. Master of Education (M.Ed.), Doctor of Education (Ed.D.).

Entrance Examination Required. Graduate Record Examination (aptitude and advanced test in education). Applications will not be considered without appropriate test scores.

Application Consideration Dates. Same as Graduate School deadlines.

Entry Times. Any regular registration.

Master of Education

Prerequisite. A valid secondary teaching credential.

Fields. Comparative and international education, secondary curriculum and instruction.

Minors Permissible. Any approved minor; Option 2.

Requirements. Minimum of 36 semester hours (including a minimum of 8 semester hours outside the Department of Secondary Education and Foundations); a written comprehensive examination and/or an oral comprehensive examination.

Residence. At least one full-time registration must be completed on the Brigham Young University campus.

Credit for Previous Work. Transfer credit will be evaluated by the department from an official transcript in determining equivalency and relevancy. This includes credit earned in compliance with state certification or renewal requirements.

Required Courses. Consult departmental brochure.

Doctor of Education

Prerequisites. A valid secondary teaching credential, a minimum of two years of successful professional education experience, and a master's degree.

Field. Secondary curriculum and instruction.

Minor. Any approved minor.

Requirements. Minimum of 75 semester hours (including a minimum of 12 semester hours outside the Department of Secondary Education and Foundations); proficiency in statistics: a dissertation (12-hr. min.—799R).

Residence. At least two consecutive full-time Summer Term sessions must be completed on the Brigham Young University campus, with an intervening supervised field experience of 5 semester hours for each of two semesters; or two consecutive full-time semesters on the Brigham Young University campus beyond the master's degree, as determined by the advisory committee.

Required Courses. Consult departmental brochure.

Secondary Education and Foundations Courses

276. Exploration of Teaching. (4:Arr.:Arr.) Prerequisites: 30 semester hours or sophomore status.

Field-based, team taught, initial teaching experience which exposes potential teachers to their strengths and weaknesses in viable educational settings.

376R. Theory and Methods of Secondary Teaching. (½-2:Arr.:Arr. ea.) Home Study also.

(See department for individual section descriptions.)

455. Recreational Reading. (1:1:0)

457. Teaching Reading in the Content Areas. (2:2:0)

458. Individualized Reading Instruction. (2:2:0)

476. Secondary Teacher Education. (1-21:Arr.:Arr.) Prerequisite: acceptance to enter certification program in College of Education.

Professional education certification experience for all approved secondary teacher candidates. A lab fee of $45 is charged, payable upon application for student teaching.

490R. Seminar. (1-2:1-2:0 ea.) Prerequisite: consent of instructor.

493R. Readings. (1-2:Arr.:Arr ea.)

514R. Special Topics in Education. (1-3:1-3:1 ea.) Home Study also.

- **—Educational Values**
- **—Instro-teaching**
- **—Individual Instruction**
- **—Career Education**
- **—*Secondary Methods**

*This course will cover various phases of the subject matter, and title may change to fit the specific category.

515R. Special Topics in Education. (1-3:1-3:1 ea.) Home Study also.

- **—Secondary Curriculum**
- **—Educational Values**
- **—Instro-Teaching**
- **—Individualized Instruction**
- **—Career Education**
- **—Secondary Methods**
- **—Environmental Education**

536. Secondary Curriculum and Methods. (3:3:0)

Analysis of differences among the various curriculum and instructional patterns, emphasizing their impact on individualized learning.

547. Foundations of Reading. (3:3:0) Prerequisite: teaching certificate or consent of instructor.

600. Research Design in Education. (3:3:0) Prerequisite: graduate standing.

601. Comparative Current Educational Philosophy. (3:3:0)

603. Educational Classics and Contemporary Issues. (3:3:0)

606. History of Education in Europe and America. (4:4:0)

607. Education in a World Setting. (2:2:0)

608. Social Foundations of Education. (3:3:0)

612R. Supervision of Student Teachers. (1-3:Arr.:Arr. ea.) Prerequisite: teaching certificate.

620R. Master's Admission Seminar. (1-3:2.2 ea.) Prerequisite: provisional admission to the master's degree program.

627. Teaching Reading in the Curriculum. (2:2:0) Prerequisite: teaching certificate or consent of instructor.

Reading in the different content areas; comprehension and study skills as developed in kindergarten through grade twelve.

632. Research and Literature in Reading. (2:2:0) Prerequisites: SecEd 547 and 627.

History of reading, emphasizing research and current literature in the teaching of reading from kindergarten through grade twelve.

636. Secondary Curriculum and Methods: Design. (3:3:0) Prerequisite: SecEd 536.

637. Organization and Supervision of Reading Programs. (2:2:0) Prerequisites: SecEd. 547, 627.

642. Methods of College Instruction. (3:3:0)

660. Research Design and Technical Writing in Education. (3:3:0) Prerequisite: Stat. 552.

680R. Internship in Education. (2-6:0:6-18 ea.) Prerequisite: consent of instructor eight weeks in advance of registration.

685. Supervision of Education. (3.3:0) Prerequisite: EdAd 675.

Supervision, curriculum, planning, and in-service training to improve instruction.

690R. Seminar. (2:2:0 ea.) Prerequisite: consent of instructor.

691. Doctoral Admission Seminar. (1-2:2:0) Prerequisite: permission of department.

693R. Independent Readings. (1-5:Arr.:Arr. ea.) Prerequisite: consent of instructor..

696R. Independent Research. (1-4:Arr.:Arr. ea.) Prerequisite: consent of instructor.

727. Curriculum of the Public Schools. (2:2:0)

751. Research Design for Doctoral Dissertation. (2:2:4) Prerequisites: doctoral candidacy and Stat. 552 or equivalent.

760R. Internship in Education. (2-8:0:6-24 ea.) Prerequisite: consent of instructor eight weeks in advance of registration.

790R. Seminar. (2:2:0 ea.) Prerequisite: consent of instructor.

796R. Advanced Research. (2-4:Arr.:Arr. ea.) Prerequisite: consent of instructor.

799R. Dissertation. (6-9:Arr.:Arr.) Prerequisite: SecEd. 751 or equivalent.

Electrical Engineering

Professors: Berrett, Bowman, Clegg, Humpherys, Jonsson (Chairman, 459 CB), Losee, Miner, Woodbury.
Associate Professors: Bearnson, Chaston, Ward.
Instructors: Hansen, Ohran.

Undergraduate Program

The Department of Electrical Engineering offers education in all fundamental principles necessary for a career as a modern professional electrical engineer. Creative design and innovation are emphasized as preparation for leadership in our technical society. Degrees offered are Bachelor of Science, Master of Engineering, Master of Science, and Doctor of Philosophy. The B.S. and M.Eng. curricula are fully accredited by the Engineers' Council for Professional Development. Graduates are educationally prepared to become licensed professional engineers.

Electrical Engineering at BYU includes such areas as electronics engineering, communication engineering, computer engineering, electrical-power engineering, and solid-state engineering. The extensive background of the faculty will prove valuable to those who wish to undertake special projects or research topics in any of these fields. Seminar work and participation in technical meetings sponsored by worldwide engineering and student organizations provide a rich beginning to a professional career.

Undergraduate course work is based on a scientific foundation provided by in-depth study of mathematics, physics, and chemistry. Through this scientific foundation and a wide scope of engineering courses and laboratories, graduates are equipped with knowledge and problem-solving techniques to assure both current competence and preparation for future developments. Students completing the undergraduate program may go on to industrial work in design, production, research, management, or related areas or to graduate academic work if University graduate school requirements are met.

Computer Studies

Several departments within BYU offer computer-related studies, and nearly all departments make some use of computers. The computer option of the Electrical Engineering Department is intended for those who are interested in the application of engineering principles to the formulation and realization of computer system designs. The scope ranges from overall system or network organization to the details of logic and solid state electronic phenomena. A student in this option also receives a survey of computer software adequate to give proper perspective to hardware design and organization.

Students in all other electrical engineering options also learn the use of electronic computers and the techniques of digital circuit design.

Students desiring a computer-oriented program emphasizing technology, utilization, or software should consult the Technology or Computer Science sections of this catalog.

Bioengineering

An electrical engineer completing either the computer or electronics option (or a combination of these two) has excellent preparation for the biomedical engineering field if a few courses are added from the biological sciences.

Entrance Requirements

For the general entrance requirements of the University and the particular requirements specified by the College of Engineering Sciences and Technology, see those sections of this catalog.

General Education Requirements

Electrical engineering students must satisfy either the new or the former general education requirements. Details of these requirements are found in the general education programs section of this catalog.

Students should not attempt to complete the general education requirements early. The prerequisite structure in this major requires constant, regular progress in the technical areas. Completion of the general education requirements should similarly be distributed. This applies to all majors, including those who expect to interrupt their schooling for missionary work or military service.

Students under the New General Education Program should contact the departmental office for advice in satisfying Category II and Category III requirements. Category I will usually be satisfied during the freshman year.

The following exceptions and suggestions apply to students under the Former General Education Program:

1. The biological science requirement is reduced to 4 semester hours.
2. Students are required to take Engl. 316 in meeting the English requirement.
3. Econ. 110 and Psych. 111 are recommended in meeting the social science requirement.

Professional Requirements

Proficiency in electrical engineering requires dedication and certain natural abilities. Only students demonstrating these qualities and showing consistent progress measured against professional standards will be retained in this program. Participation in extracurricular Institute of Electrical and Electronics Engineers (IEEE) functions is required. A cumulative grade-point average of 2.00 (C) or better is required in mathematics, in physics, and in engineering subjects prior to registration in ElecEng. 313. No more than 6 hours of D credit in electrical engineering courses will be counted toward graduation. Students will be dropped from the program if they receive unsatisfactory grades: D (after the 6-hour limit), E, WE, UW, or I (unconverted) in three or more courses in the professional program or more than once in any one such course. In extenuating circumstances students may be reinstated if, upon petition, they obtain the approval of a majority of the department faculty.

Undergraduate Seminar

Electrical engineering majors must enroll in ElecEng. 291R each semester except during the time they are taking ElecEng. 491 or 492. This undergraduate seminar will meet on the first and third Thursdays of each month at 10:00 a.m. You should consult the bulletin board, outside 459 CB, for the location of each meeting and the speaker scheduled.

Spring and Summer Terms

The basic four-year bachelor's degree and five-year master's degree programs are planned to utilize only the Fall and Winter Semesters. Students desiring to attend school during the Spring Term as well as the Fall and Winter Semesters can usually, on an accelerated schedule, complete the same bachelor's requirements in three years and the master's requirements in four. Suggested sequences of courses for this accelerated program are available from departmental advisers.

Entering freshmen who need further preparation for calculus (Math. 112) may very profitably pursue this preparation during the Summer Term prior to their first fall registration by completing appropriate units of Math. 110.

Requirements for Bachelor of Science Degree

Each student is required to complete the following technical courses for the Bachelor of Science Degree:

	Hours
Math. 112, 113, 214, 321	14
Physics 121, 122, 221	9
Chem. 105, 107	6
CivEng. 301, 304	6
DesTech. 111	2
MechEng. 301	3
ElecEng. 100, 120, 212, 220, 221, 313, 314, 343, 411, 431, 491, 492	31
Courses from an option	22

See the general education programs section of this catalog for additional requirements.

Details of the option course work are contained in the next section.

An extremely high degree of prerequisite and corequisite structure exists among these courses. Additional prerequisites must be filled for courses within an option. Because of the many variations in possible schedules and because few classes are offered every term, students must carefully plan their progress to avoid taking additional time. **The aid of a departmental adviser is essential in constructing this plan.** Advisers are assigned through the Electrical Engineering Department secretary, 459 CB.

Students with adequate preparation in drafting may be excused from this requirement by examination. For further details see your adviser.

Options

Three basic options are offered as detailed below. Each option requires introductory course work in an area of electrical engineering. Standard options are (1) computers, (2) electronics, and (3) power. Other options satisfying a particular student's needs may be submitted for prior approval by petition to the department chairman.

Following are suggested sequences for students in each of the three options. If you do not begin in Math. 112 or intend to use some Spring and Summer Terms or if you are in ROTC, you should consult an adviser in preparing a program tailored to your needs.

Students should understand that general education requirements (including religion) are in addition to the course requirements shown in the typical program. Students are urged to prepare a complete integrated course program and review it with their adviser. Aids are available in the department office.

Computer: The computer option should be chosen by students whose interests include digital computer design, switching theory, telecommunications, or the design of digital electronic circuitry. In addition to the common courses listed above, the following courses are required:

	Hours
ComSci. 232, 300	6
ElecEng. 224, 320	7
Technical electives	9
Total	22

Technical electives may be chosen from courses with computer involvement in electrical engineering, mathematics, statistics, or computer science with prior approval of your adviser.

Suggested Schedule

First Year	**F**	**W**
Math. 112, 113	4	4
Physics 121, 122	3	3
ElecEng. 100, DesTech. 111	1	2
ElecEng. 120	3	
ElecEng. 291R	0	0

Second Year	**F**	**W**
Math. 214, 321	3	3
Physics 221, ComSci. 232	3	3
ElecEng. 220, 224	3	3
ElecEng. 221, 212	1	4
ElecEng. 291R	0	0

Third Year	**F**	**W**
ElecEng. 313, 314	4	3
CivEng. 301, ElecEng. 343	3	4
ElecEng. 320, ComSci. 300	4	3
Chem. 105, 107	4	2
ElecEng. 291R	0	0

Fourth Year	**F**	**W**
ElecEng. 491, 492	½	½
ElecEng. 411		3
MechEng. 301	3	
CivEng. 304, ElecEng. 431	3	4
Technical elective	4	5

Electronics: The electronics option is designed for students whose interests include electronic circuits, radio or television communications, microwave systems, antennas, solid-state devices, integrated circuit design, and physical electronics. In addition to the common courses listed previously, the following courses are required:.

	Hours
MechEng. 302	3
ElecEng. 350, 360, 442, 445	12
Technical electives	3
Restricted elective ElecEng. 560 or 561 or 550 and 552R	4
Total	22

Technical electives may be chosen from upper division or graduate courses in engineering, mathematics, statistics, physics, chemistry, or computer science with prior approval of your adviser.

Suggested Schedule

First Year	**F**	**W**
Math. 112, 113	4	4
Physics 121, 122	3	3
ElecEng. 100, DesTech. 111	1	2
ElecEng. 120	3	
ElecEng. 291R	0	0

Second Year	**F**	**W**
Math. 214, 321	3	3
ElecEng. 220, Physics 221	3	3
Chem. 105, 107	4	2
ElecEng 221, 212	1	4
ElecEng. 291R	0	0

Third Year	**F**	**W**
ElecEng. 360, 350	4	3
CivEng. 301, 304	3	3
ElecEng. 313, 314	4	3
ElecEng. 343		4
ElecEng 291R	0	0

Fourth Year	**F**	**W**
ElecEng. 445, 431	1	4
MechEng 301, 302	3	3
ElecEng 442, 411	4	3
ElecEng 491, 492	½	½
Technical electives	4	3

Power: The power option is for those interested in employment with electric utilities, industrial companies, electrical equipment manufacturers, electrical construction, and energy consultants.

	Hours
ElecEng. 437, 531, 534	7
MechEng. 302	3
CivEng. 471	3
Technical electives	9
Total	22

Those interested in power generation or nuclear engineering may substitute MechEng. 321, 322, 412, 540, and 4 hours of technical electives for MechEng. 301 and 302, ElecEng. 534, and 9 hours of technical electives.

Suggested Schedule

First Year	**F**	**W**
Math. 112, 113	4	4
Physics 121, 122	3	3
ElecEng. 100, DesTech. 111	1	2
ElecEng. 120	3	
ElecEng. 291R	0	0
Second Year	**F**	**W**
Math. 214, 321	3	3
Physics 221	3	
Chem. 105, 107	4	2
ElecEng. 221, 212	1	4
ElecEng. 291R	0	0
Third Year	**F**	**W**
ElecEng. 431	4	
CivEng. 301, 304	3	3
ElecEng. 313, 343	4	4
MechEng. 301, 302	3	3
ElecEng. 291R	0	0
Technical electives		3
Fourth Year	**F**	**W**
ElecEng. 220	3	
ElecEng. 491, 492	½	½
ElecEng. 531	3	
ElecEng. 314, 411	4	3
MechEng. 412, 540	3½	3½
Technical elective		6
ElecEng. 437	1	
CivEng. 471	3	

New Freshman Registration

Because of the complicated prerequisite structure and varying student needs, a long-range schedule of courses should be individually developed by each student as soon as possible. Decisions such as terms of attendance, option choice, and mission or service breaks should be at least tentatively made and planned into the schedule. Helpful scheduling guides may be secured from the department secretary in 459 CB. To avoid problems, this schedule should be reviewed with your adviser.

For most students first-semester registration falls into one of two categories, with mathematics background being the determining factor. Students with an ACT mathematics score of 25 or higher and with a high school trigonometry class should enroll in Math. 112. Those with ACT mathematics scores of 23 or 24 should register for Math. 110 for 5 credit hours. Those with ACT mathematics scores lower than 23 should consult with an Electrical Engineering Department adviser and then a Mathematics Department adviser. We then recommend the following first semester sequence of courses as determined by preparation. General education courses may be added to make a full load.

Beginning in Math. 112

Math. 112	4
Physics 121	3
ElecEng. 100	1
ElecEng. 120 or general education	3
ElecEng. 291R	0

Beginning in Prior Mathematics

Math. 110	5
Chem. 105	4
ElecEng. 100	1
ElecEng. 291R	0

For answers to further questions, write to Freshman Advisement, Electrical Engineering Department, 459 CB.

New Transfer Registration

Each new transfer student's situation must be evaluated separately. Help may be received by writing or calling Transfer Advisement, Electrical Engineering Department, 459 CB.

Graduate Program

As technological knowledge increases, it becomes more and more necessary for students to extend their schooling beyond the bachelor's level. Adequate preparation for leadership in many industries is now considered to be the master's degree, and the doctorate is increasingly being sought by those in research and teaching activities. Opportunities for influential positions of leadership come more readily to those with advanced degrees, and those without are often given the more routine assignments. Thus, it is strongly recommended that students who qualify for admission to Graduate School take this opportunity to increase their worth. We also point to the advantages of doing this promptly rather than in anticipation of spreading the work over several years while working full time; there are many who fail to complete programs under such circumstances because of discouragement in the long grind, because of increased responsibilities on the job, and because of interference with opportunities for travel. The necessity to limit job responsibilities to keep up with school is a liability to be considered.

As early as the junior year, students who have a GPA of at least 2.50 and who otherwise qualify may begin work on a master's degree under the integrated master's program. Under this program, certain graduate courses may be taken before other required but nonpacing courses. Thus, requirements for bachelor's and master's degree are completed at approximately the same time, and both degrees are often awarded simultaneously.

The Master of Science degree (M.S.) includes a greater emphasis on research procedures and is recommended for students planning to continue study to the doctoral level. Course requirements are a 30-hour program beyond the bachelor's degree, including ElecEng. 513, 6 hours of mathematics or statistics, and a 6- to 9-hour thesis (ElecEng. 699R).

The Master of Engineering degree (M.Eng.) allows more course work and greater design training. Course requirements are the same as for the M.S., except that a 3-hour project (ElecEng. 697R), and additional electives replace the thesis.

Programs. Master of Science (M.S.), Master of Engineering (M.E.), and Doctor of Philosophy (Ph.D.).

Entrance Examinations Required. None, unless the student's undergraduate school is not accredited; then the student must submit results of the Graduate Record Examination (advanced test in engineering).

Application Consideration Dates and Entry Times. Same as the Graduate School schedule.

Master of Science

Prerequisites. B.S. degree in electrical engineering from a recognized school (accredited by the Engineers' Council for Professional Development); or, with the consent of the department, a B.S. degree in an allied discipline. With a non-E.E. degree, remedial work will generally be required.

Fields. Communications engineering, computer engineering, electrical power engineering, solid-state electronics.

Requirements. Minimum of 24 semester hours (including 6 hours in mathematics and/or statistics) plus thesis (6-hr. min—699R). Each student must register in at least one hour of ElecEng. 699R each graduate semester and must attend the associated seminar.

Recommended Courses. The following courses are recommended for the areas of specialization indicated:

Computer
ElecEng. 513, 520, 521, 522R, 523, 525, 526, 527, 528, and 529.
Other courses from mathematics, computer science, and electrical engineering

Electronics
ElecEng. 513, 542R, 550, 551, 552R, 560, 561, 661, 663, 664, and 665.
Other courses from mathematics and electrical engineering computer courses.

Power Systems
ElecEng. 360, 513, 532R, 533, 535, 536, 537R, and Chem Eng. 520, 582.
Other courses from mathematics, statistics, computer science, chemical engineering (nuclear classes), and electrical engineering.

Master of Engineering

Prerequisites. B.S. degree at a recognized school (accredited by the Engineers' Council for Professional Development). If the school is not accredited, the student must submit results of the Graduate Record Examination (advanced test in engineering).

Fields. Communications engineering, computer engineering, electrical power engineering, solid-state electronics.

Requirements. 27 semester hours (including 6 hours in mathematics and/or statistics) plus a project (3-hr. min.—697R). Each student must register in at least one hour of ElecEng. 697R each graduate semester and must attend the associated seminar.

Required Courses. See listing under Master of Science for each field of interest.

Doctor of Philosophy

This program is administered by an interdepartmental committee. For further details, see the College of Engineering Sciences and Technology section of this catalog.

Courses

100. Introduction to Electrical Engineering. (1:1:0)
Fields and profession of electrical engineering; elementary engineering problems.

120. Introduction to Computer Engineering. (3:3:0)
Types of computers, their basic organization, and means of storing and processing information.

212. Circuit Analysis 1. (4:3:3) Prerequisites: ElecEng. 221, Physics 122, and Math. 113.
Analysis of electrical and electronic circuits. Normally followed by ElecEng. 313.

220. (ElecEng.—ComSci.) Digital Computer Electronics. (3:2:3) Prerequisite: ElecEng. 120.
Basic elements and technologies used to make digital computers; laboratory experience in construction of simple computer subsystems.

221. Numerical Solutions in Electrical Engineering. (1:1:0) Prerequisite: completion of or concurrent registration in Math. 112.
Beginning FORTRAN programming and the numerical solutions of elementary problems.

224. (ElecEng.—ComSci.) Digital Computer Sequential Circuits Design. (3:2:3) Prerequisites: ElecEng. 220 and ComSci. 232.
Asynchronous and synchronous sequential circuit analysis and synthesis, including flip-flop excitation functions, state assignments, and race conditions.

291R. Undergraduate Seminar. (0:½:0 ea.)

299R. Cooperative Education: Electrical Engineering. (0-3:Arr.:Arr. ea.) Prerequisites: consent of department and college coordinators. Students must meet departmental requirements and consult adviser prior to enrollment.
On-the-job experience. Report required.

301. Elements of Electrical Engineering. (2:2:0) Prerequisites: Physics 122, Math. 321.
Study of linear electrical circuits for nonmajors.

302. Elements of Electrical Engineering. (2:2:0) Prerequisite: ElecEng. 301 or 311.
Polyphase circuits, magnetic circuits, DC and AC machines, and transformers.

303. Elements of Electrical Engineering Laboratory. (1:0:3) Prerequisite: concurrent registration in ElecEng. 302.
Series of energy conversion experiments designed to parallel ElecEng. 302.

304. Elements of Electrical Engineering. (2:2:0) Prerequisite: ElecEng. 301.
Electronics circuit analysis and design.

305. Elements of Electrical Engineering Laboratory. (1:0:3) Prerequisite: concurrent registration in ElecEng. 304.
Electronics circuit and instrumentation experiments. Designed to parallel ElecEng. 304.

311. Circuit Analysis. (4:3:3) Prerequisite: ElecEng. 210.
Linear and nonlinear electrical circuits.

313. Circuit Analysis 2. (4:3:3) Prerequisites: ElecEng. 212 and Math. 321.
Analysis of electrical and electronic circuits. Normally followed by ElecEng. 314.

314. Circuit Analysis 3. (3:3:0) Prerequisites: ElecEng. 313.
Analysis of electrical and electronic circuits.

320. Computer Organization and Architectural Design. (4:3:3) Prerequisite: ElecEng 224.
Arithmetic techniques, overall organization, memory systems, channels, peripheral devices, controllers, comparison of contrasting architectures, multiprocessing, multiprogramming, paging, segmentation, and virtual memory.

341. Electronic Circuits and Devices 1. (4:3:3) Prerequisite: ElecEng. 210.
Physical characteristics of electronic devices and components.

343. Electronic Circuit Design. (4:3:3) Prerequisite: ElecEng. 313.
Design of electronic circuits and study of electronic devices.

350. Electrical Properties of Materials. (3:2:3) Prerequisite: completion of or concurrent registration in ElecEng. 360 and in 341 or 313.
Electrical properties of crystalline solids.

360. Introductory Electromagnetics. (4:4:0) Prerequisite: Math. 322.
Static and dynamic electromagnetic fields; applications to transmission lines, microwave components, and electromagnetic structures.

399R. Cooperative Education: Electrical Engineering. (0-3:Arr.:Arr. ea.) Prerequisites: consent of department and college coordinators. Students must meet departmental requirements and consult adviser prior to enrollment.
On-the-job experience. Report required.

411. Feedback Concepts. (3:3:0) Prerequisites: CivEng. 304; ElecEng 314 or 431

431. Electrical Energy Conversion. (4:3:3) Prerequisite: ElecEng. 311 or 212
Magnetic circuits, transformers, and energy conversion principles.

437. Power Design Project. (1:0:3) Prerequisites: concurrent registration in ElecEng. 531.
Senior design project in power topics.

442. Electronic Circuits and Devices 2. (4:3:3) Prerequisite: ElecEng. 341 or 343.

445. Electronics Design Project. (1:0:3) Prerequisites: concurrent registration in ElecEng. 442.
Senior design experience in electronics.

491, 492. Senior Seminar. (½:2:0 ea.) Prerequisite: senior standing in electrical engineering.

513. Linear Systems. (3:3:0) Prerequisite: graduate standing or consent of instructor.
State-space and transform techniques in the analysis of linear systems.

520. Error-Correcting Codes. (3:3:0) Prerequisites: ElecEng. 320.
Methods, costs, and payoffs of various codes for correcting errors in digital systems.

521. Microprocessors. (3:3:0) Prerequisite: ElecEng. 320.
Architectures, languages, characteristics, and applications.

522R. Special Topics in Computer Systems. (1-3:Arr.: Arr. ea.) Prerequisite: consent of instructor.

523. Computer Network Queueing. (3:3::0) Prerequisite: ElecEng. 320.
Queueing concepts related to computer systems and networks, resource allocation, speed, service time. Applications of random variables and probability theory.

525. Design Automation. (3:3:0) Prerequisite: ElecEng. 320.
Algorithms for cost effective payoffs, simulation and fault testing of digital electronics.

526. Computer Communication Systems. (3:3:0) Prerequisites: ElecEng. 320, 442.
Modeling of distributed computer networks for the study of costs, reliability, protocols, configuration, resource allocation, etc.

527. Digital Filters. (3:3:0) Prerequisites: ElecEng. 320 and 513.
Digital filters and methods of realization.

528. Computer Systems Architecture. (3:3:0) Prerequisite: ElecEng. 320.
Comparison of common and unique computer system architectures, generally large machines.

529. Computer Graphics and Real-Time Programming. (3:3:0) Prerequisite: ElecEng. 320.
Graphic input/output systems for digital computers; on-line and real-time hybrid systems.

531. Power Systems Analysis. (3:3:0) Prerequisite: ElecEng. 302 or completion of or concurrent registration in ElecEng. 431.
Polyphase circuits, transmission line constants, power system representation, generalized circuit constants, symmetrical components, and fault studies.

532R. Special Topics in Power Systems. (3:3:0 ea.) Prerequisite: ElecEng. 531.

533. Power Machinery and Equipment. (3:3:0) Prerequisite: ElecEng. 302 or 431.
Transformers; synchronous, induction, and DC machines; other power system devices.

534. Direct Energy Conversion. (3:3:0) Prerequisites: Physics 122 and Math. 321.
Theory and operation of modern electrical energy conversion devices.

535. Protective Relaying. (3:3:0) Prerequisite: ElecEng. 531.
Methods and equipment used for electric utility and industrial power system protection.

536. Commercial and Industrial Power Systems. (3:3:0) Prerequisite: ElecEng. 431 or 302.
Design of commercial and industrial power systems and equipment; design of illuminating systems; preparation of specifications which conform to the National Electrical Code.

537R. Advanced Control Machinery Laboratory. (1:0:3 ea.) Prerequisite: completion or concurrent registration in ElecEng. 533.
Experiments with electrical machinery, control systems, and power distribution systems.

541. Switching, Timing, and Pulse Circuits. (4:3:3) Prerequisite: ElecEng. 341.
Passive and active electronic circuits, emphasizing nonlinear modes of operation.

542R. Special Topics in Electronics. (1-3:1-3:0 ea.) Prerequisite: consent of instructor.

550, 551. Physical Electronics. (3:3:0 ea.) Prerequisite: ElecEng. 350.
Theory and applications of solid state electronic devices, including Gunn and avalanche diodes, lasers, and magnetic and accoustical devices.

552R. Semiconductor Laboratory. (1-2:0:3-6 ea.) Prerequisite: ElecEng. 350.
Experimental investigation of semiconductor materials, including basic measurements and construction of electronic devices.

560. Microwave Engineering. (4:3:3) Prerequisite: ElecEng. 360.
Application of electromagnetic field theory to microwave components and systems.

561. Communication Circuits. (4:3:3) Prerequisites: ElecEng. 360, 442.
Circuits and RF techniques used in communication systems.

593R. Special Topics in Electrical Engineering. (3:3:0 ea.) Prerequisite: consent of instructor.
Topics vary. Recent developments in electrical engineering.

598R. Special Problems. (1-2:Arr.:Arr. ea.) Prerequisite: consent of instructor.

599R. Cooperative Education: Electrical Engineering. (0-3:Arr.:Arr.: ea.) Prerequisites: consent of department and college coordinators. Students must meet departmental requirements and consult adviser prior to enrollment.
On-the-job experience. Report required.

661. Advanced Electromagnetic Fields. (3:3:0) Prerequisite: ElecEng. 560.
Physical interpretation of electromagnetic fields. Mathematical methods of solving boundary value and other field problems.

663. Antenna Theory. (3:3:0) Prerequisite: ElecEng. 560.
Radiation, terminal, and distributed properties of antenna structures.

664, 665. Communication Theory 1, 2. (3:3:0 ea.) Prerequisite: graduate standing or consent of instructor.
Transmission through electric networks, periodic sampling, pulse modulation, analysis of information transmission systems, and noise considerations.

697R. Master of Engineering Project. (3-9:Arr.:Arr. ea.) Prerequisites: graduate standing and consent of major professor.

698R. Readings and Seminar. (1:1:0 ea.) Prerequisite: graduate standing.

699R. Thesis for Master's Degree. (6-9:Arr.:Arr. ea.) Prerequisites: graduate standing and consent of major professor.

791R. Seminar for Doctoral Students. (1:1:0 ea.)

794R. Selected Topics in Electrical Engineering. (1-3:Arr.:Arr. ea.)

797R. Research for Doctoral Students. (1-9:Arr.:Arr.)

799R. Dissertation for Doctoral Students. (6-9:Arr,:Arr.)

English

Professors: Blanch, B. Clark, M. Clark, Cracroft (Chairman, 246 JKBA), Craig, Ellsworth, J. B. Harris, Farnsworth, Gassman, Hart, Jacobs, King, Lambert, Larson, Monson, Tate, R. Thomas, Thomson, West, Wood.

Associate Professors: Arnold, B. Best, England, Esplin, Evans, Geary, J. S. Harris, Horton, Hunsaker, Luthy, McKellar, McKendrick, Thayer, G. Thomas, J. Thomas, Waterstradt, Wight, Williams, Wilson.

Assistant Professors: Alder, Ballantyne, Bell, Bennion, L. Best, Hansen, Hayes, Howe, Nielsen, Poulsen, Ream, Ridenhour, Smith, Wahlquist, Walker.

Instructors: Bird, Jorgensen, Norton.

Undergraduate Program

The English Department provides a wide variety of courses of value and interest to the University community as a whole as well as to those who wish to pursue a major or minor in English language and literature. To help students meet the general education requirements, the department offers both a composition program designed to improve language and writing skills and several sophomore-level literature courses designed to provide vital experiences within the humanistic tradition.

The English major or minor program is designed to provide a significant encounter with the humanizing forces of language and literature. As an important focus in the tradition of the liberal arts, the study of English should produce graduates more conscious of themselves, their society, their values, and their traditions.

The Bachelor of Arts degree in English also prepares the student to pursue numerous career possibilities. Many English majors and minors go into teaching in the public schools, and others go on to graduate school to prepare for college and university teaching. However, an ever-increasing number of alternative paths are opening up to the English major or minor. Schools of law and graduate schools of business administration frequently encourage their potential candidates for admission to pursue the liberal arts background and the analytical and writing abilities that an English major or minor develops. Many business firms and government agencies seek candidates for their individual training programs from among graduates with a liberal arts degree such as English. Library science and the many fields of modern communication and publication offer additional career possibilities for the well-prepared English major.

Students interested in English as a major for pre-law, pre-MBA, pre-library science, or other such professional programs should consult with advisers of the English Department, who will recommend programs most suitable to their needs.

English Composition

Richard C. Poulsen, Coordinator

All new students who entered the University Fall Semester 1976 or thereafter will earn general education credit by passing University-approved evaluations. In Category I, each student will be required to pass an evaluation in basic writing and critical reading skills. The English Department offers a program to help students prepare for this evaluation and develop the reading and writing skills necessary to academic success and professional competence.

English 105 and 107 are basic writing and reading courses designed to help those students who may need an organized review of basic skills before taking Engl. 113, Writing Laboratory; 114, Reading Laboratory; or 115, College Reading and Writing, the actual preparatory courses for the Category I evaluation. Students desiring to take courses to review or prepare for the evaluation will be assigned to Engl. 105 and/or 107 and to Engl. 115 (or 113, 114) on the basis of scores on their high school achievement or aptitude tests.

Engl. 105, 107, 113, 114, and 115 are taught every semester, with enough sections offered each semester for about half the students desiring the courses. Therefore, only students whose last names begin with letters A through K should register for Engl. 105, 107, or 115 Fall Semester. Students whose last names begin with letters L through Z should register for these courses Winter Semester. Students who already have sufficient reading and writing skills may, of course, challenge the evaluation without taking courses. Students who successfully challenge the evaluation will receive credit for the approved preparatory course, Engl. 115. Students who need help only with reading or with writing, but not both, have several ways to prepare for the evaluation. The Learning Resource Laboratory in the library not only provides Engl. 113, Writing Laboratory, and Engl. 114, Reading Laboratory, but also drop-in assistance for those students not needing or desiring to take classes to develop skills or to prepare for the evaluation. Other courses that will help develop reading skills and prepare students for that part of the evaluation include Engl. 250R, 260, and 270, all introductory literature courses which also prepare students for Category II evaluations in arts and letters. (Foreign students should clear with the international student adviser, and advanced placement students should check with the advanced placement office before registration.)

Students desiring to develop writing skills beyond those evaluated in the freshman year or to prepare for the Category III advanced waiting evaluation required of all students in their junior or senior year may take Engl. 312, 315, or 316. Which course a student takes should be determined by consulting with the student's major department. The advanced writing evaluation can be essentially completed with the writing required and accumulated in Engl. 312, 315, or 316, any one of which should be taken concurrently with Category II work in a substantive field or with a course in the student's major. The English Department will schedule enough sections of the above courses each semester to accommodate half the students desiring them. Students should therefore plan to register according to the same alphabetical division indicated for freshman courses. English majors should plan to take Engl. 252 to develop writing skills essential for their field and to prepare for the advanced writing evaluation.

Requirements for an English Major

A major in English requires 35 credit hours in English beyond the Category I writing and reading evaluations. Because all majors must complete the 201 level or higher in a foreign language, English majors are urged to complete their Category III evaluation in a foreign language.

The English Department awards the Bachelor of Arts degree upon satisfactory completion of University and departmental requirements for graduation. Usually, no D credit in English may be applied toward the completion of requirements for the English major.

The English Department requires its majors to take Engl. 251 and 252, which are prerequisite to other English courses. These courses will also prepare majors for the Category III advanced writing evaluation, which should be completed during the freshman or sophomore year. Students deciding on an English major after completing Category I evaluations and students transferring 6 hours of composition or reading credit should consult with English Department advisers upon entering their major or minor programs. Such students may, with permission, be exempted from taking Engl. 252. All majors and teaching minors must take Engl. 251

All English majors must complete the following courses and course options:

A. English Literature before 1800:
Engl. 301 (4) **plus** one course from Engl. 371, 372, 373

or

Engl. 382(3) **plus** two courses (6) from Engl. 371, 372, 373.

B. English Literature after 1800:
Engl. 302 (4) **plus** one course from Engl. 374, 375, 376

or

Two courses (6) from Engl. 374, 375, 376.

C. American Literature:
Engl. 303 (4) **plus** one course (3) from Engl. 361, 362, or 363; **or** two courses (6) from Engl. 361, 362, and 363.

D. Languages:
Engl. 320 (3) required of all majors.

E. Senior English Examination
Engl. 491 (0) required of all majors.

Majors should take sufficient additional courses from the English courses numbered in the 300, 400, and 500 series to bring their total in English to at least 35 hours. Most English courses in the 100 and 200 series are service or general education courses, and, with the exception of Engl. 218R (and, in certain cases cited above, Engl. 251 and 252), courses in the 100 and 200 series generally will not count toward a major. English majors may count one of the following 3-hour courses toward the 35 hours required: Engl. 250R, 260, and 270. Such courses as Engl. 377, 422, and 479, which count toward teacher certification, will not count toward a major.

There is a wide flexibility in the English major program, which allows students to pursue their own interests. Students should consult with their departmental adviser in setting up a program that will help them best meet their educational and professional goals. A student would probably be well advised, however, not to project too narrow a program. The department suggests that every student's program should cover historical surveys in both English and American literature as well as courses in language, writing, and genre.

Students planning to do graduate work in English should consider the advantages of taking Engl. 423, Teaching Composition, as preparation for possible teaching assistantships, internships, and fellowships. Such students should also consider in advance the requirements for entering graduate work in English at BYU: one course in literary criticism, one course in history of the language, and one course in modern grammar (as well as a reading knowledge of a foreign language, preferably French or German). Students considering professional schools (law, business management, etc.) should plan to strengthen their writing abilities through advanced courses in expository writing.

The department provides a minimum reading list of literature, which English majors should obtain from the English office and use as a guide to their program and independent study. During their senior year, they may elect Engl. 490 (Senior Seminar), a course based on the reading list and designed to help students correlate and assimilate their study of literature.

During their senior year—preferably during their last semester—candidates for graduation must pass a standard examination on English and American literature, language, and writing. The examination grade will be recorded on the student's transcript and will be consulted in connection with job interviews, letters of recommendation, departmental awards, and other such matters. A score equivalent to a B is required for admission to graduate work in English, and the examination score becomes a part of the student's record.

Supporting Courses and Minor Programs for English Majors.

An English major who is not a teaching major need not complete a regular departmental minor. By carefully choosing courses to fill certain general education groups and by electing courses from several departments that are complementary to their major, students may develop a program more useful to them than that of a traditional minor. The following are some of the complementary courses strongly recommended by the English Department: ClCiv. 341; Hist. 120, 121, and 335; Hum. 201 and 202; Phil. 110 and 222; ThCA 121 and 325; and upper-division courses in comparative literature and American Studies.

If students wish to complete a minor and have it recorded on their records, they may select a minor from virtually any area. Particularly harmonious to the English major are most courses taken in departments in the College of Humanities, the College of Social Sciences, and the College of Fine Arts and Communications—or in philosophy or library science.

Requirements for a Teaching Major in English

The requirements for a teaching major in English are the same as those for the English major listed above, except that the student completing a teaching major must complete Engl. 321, 322, or 421 and acceptable electives to total at least 35 hours (Engl. 377 and 479 and other professional certification courses may not be counted).

The teaching major must complete Engl. 377 and 479 or their equivalents within the SecEd. 276, 376R, and 476 sequence of professional courses outlined by the College of Education. In addition, teaching majors must complete a teaching minor consisting of approved courses in subjects approved for certification by the English Department and the College of Education. The department particularly recommends minors in such supporting fields as social sciences, fine arts, humanities, and American Studies.

Requirements for a Teaching Minor in English

To qualify for an English teaching minor, a student must complete Engl. 301, 302, 303, 320, 321 or 322 or 421, additional courses in English to total at least 20 hours; and Engl. 377 (to be completed before student teaching). Engl. 251 is prerequisite to the preceding courses.

Requirements for a Nonteaching Minor in English

A nonteaching minor in English requires a minimum of 14 hours beyond the University Category I evaluations. At least 6 of the 14 hours required must be upper-division. In selecting courses for a minor, students should consult with an adviser in their major department and, if they desire, with a member of the English Department. The department strongly recommends that minors take Engl. 251 and 252 as part of their minimum requirements.

Associate of Arts Degree

Many students have also shown interest in the Associate of Arts degree in English, in which English combines with other disciplines such as fine arts, communications, theatre and cinematic arts, or family living to provide a number of attractive options in a two-year program. Inquiries regarding the A.A. degree should be directed to the department chairman or administrative assistant.

English for Nonnative Speakers

For placement of, and courses provided for, students whose native language is not English, see information under Department of Linguistics.

The English Department and General Education

See the preceding English Composition section for a description of departmental offerings which will prepare the student for Category I evaluations. Most departmental courses may be taken as preparation for Category II evaluations, Arts and Letters, but the department particularly recommends Engl. 250R, 260, and 270, as well as Engl. 382 (Shakespeare). However, evaluations are available in other literature, language, and writing courses. For additional information, consult with department advisers.

Graduate Program

Programs. Master of Arts (M.A.).

Entrance Examination Required. Graduate Record Examination (verbal and advanced) **or** the senior comprehensive written examination of this department.

Application Consideration Dates. Same as Graduate School deadlines.

Entry Times. Any registration. All students must report to the department graduate coordinator upon entry into the program.

Master of Arts

This program is designed to prepare students for Ph.D. work in English and teaching English on the junior college level.

Prerequisites. Undergraduate major or its equivalent (including one course in literary criticism, Engl. 351 or equivalent; one course in history of the language, Engl. 421 or equivalent; and one course in modern grammar, Engl. 321 or equivalent) and a reading knowledge of one foreign language, preferably French or German.

Fields. American literature, English language, English literature.

Minors Permissible. Option 1 (any of the three fields not selected for the major or a related area, such as modern languages, linguistics, psychology, or history): Option 2 (permission of the departmental graduate coordinator required).

Requirements. Minimum of 24 semester hours plus thesis (6-hr. min.—699R). Students must enroll for 1 hour of Engl. 695R each Fall and Winter Semester until the thesis prospectus has been filed (only 2 hours of Engl. 695R will count toward graduation); thereafter they must enroll for 1 or more hours of Engl. 699R each Fall or Winter Semester

Required Courses. Engl. 615; and 529 or 624 or 626.

Thesis. A student may select any one of the following four options:

1. A thesis on a topic demanding research, criticism, or both.
2. Three long papers written in three different areas of English or American language or literature and on topics demanding research, criticism, or both.
3. Two long papers written in two different areas of English or American language or literature and on topics demanding research, criticism, or both; and a substantial creative work.
4. An extended creative project as described below. Candidates who want to apply for this option should inform the graduate coordinator of the English Department when they begin their work for the degree. They must comply with the regulations of the English Department and the Graduate School in the same ways as other candidates.

To prepare for Option 3 candidates must complete 3 hours of the following courses: Engl. 315, 316, 318R, 319R; or, if one is a transfer student, their equivalent. To prepare for Option 4, candidates must complete at least 3 hours either as a graduate or undergraduate student in the English 300 writing series and at least 2 hours in Engl. 518R. The average grade for the required course or courses must be at least B They must also submit samples of their current creative writing to the Writing Committee of the English Department, who, within a two-week period, will evaluate them and will recommend acceptance or rejection of the candidate's application. When candidates for either option have been assigned an advisory committee, the committee will approve their creative project—which may consist of such forms as essays, a drama or dramas, librettos, short stories, a novella, a novel, or poetry—to satisfy the thesis requirement.

Courses

105. Basic Writing Review. (2:2:1)
Intensive review of the essentials of the sentence and the paragraph, emphasizing sentence elements and structure, usage, spelling, punctuation, and grammar. Lab required.

107. Basic Reading Review. (2:2.1)
Essentials of reading: basic vocabulary, fluency, elementary structure, logic, and language. Lab required.

113. Writing Laboratory. (2:0:2)
Diagnosis and direction in individual student writing problems leading to completion of Category I writing evaluation.

114. Reading Laboratory. (2:0:2)
Diagnosis and direction in individual student reading problems leading to completion of Category I reading evaluation.

115. College Reading and Writing. (4.4:0) Home Study also.
Basic principles of critical reading and expository writing—purpose, structure, logic, language, grammar, and mechanics. Lab required. Prepares for Category I reading and writing evaluation.

217. Writing for Children and Adolescents. (2:2:0) Home Study also. Prerequisite: completion of Category I writing and reading evaluations or consent of instructor.
Theory and practice of writing prose and verse for youth readership. Special attention to requirements of the realistic adolescent novel.

218R. Creative Writing. (3:3:0 ea.) Home Study also. Prerequisite: Engl. 251, 312, 315, or 316.
Writing short stories, poems, dramas, and informal essays.

220. Writing Personal History. (2:2:0)
Composition course teaching the necessary techniques for writing a personal history

225. Vocabulary Building. (2:2:0) Home Study also.
Developing an effective vocabulary through study of prefixes, suffixes, and roots.

250R. Literature. (3:3:0 ea.) Home Study also. (G-HA)
Considers various literary themes, forms, and authors. Sections vary. Recommended to prepare for Category I reading evaluation.

251. Fundamentals of Literature. (3:3:0) Home Study also. Prerequisite: Engl. 115 or successful completion of Category I writing evaluation.
Literary appreciation, criticism, and terminology and interpretive writing. Required of all English majors and recommended for other students whose majors or minors focus on literature.

252. Writing about Literature. (2:2:0) Home Study also Prerequisite: Engl. 115 or successful completion of Category I writing evaluation; concurrent enrollment in Engl. 251.
Prerequisite to English major. Literature-based expository and research writing.

260. Vital Themes in American Literature. (3:3:0) Home Study also. (G-HA)
Selected readings in American literature that raise issues vital in the life of every human being Does not count toward the English teaching minor Recommended to prepare for Category I reading evaluation.

270. Masterpieces of English Literature. (3:3:0) Home Study also. (G-HA)
Selected readings in English literature from medieval times to the present. Does not count toward the English teaching minor. Recommended to prepare for Category I reading evaluation.

300R. English Literature in a Cultural Setting. (1-5.1-4:1-4 ea.)

301. Early Masters of English Literature. (4:4:0) (G-HA) Prerequisite: Engl. 251 and 252.
Critical study of works of major English authors through the eighteenth century; interpretive composition emphasized.

302. Later Masters of English Literature. (4:4:0) (G-

HA) Prerequisite: Engl. 251 and 252.
Critical study of works of major English authors since the eighteenth century; interpretive composition emphasized.

303. Masters of American Literature. (4:4:0) (G-HA) Prerequisite: Engl. 251 and 252.
Critical study of major works of major American authors; interpretive composition emphasized.

312. Critical and Interpretive Writing. (3:3:0) Home Study also. Prerequisite: successful completion of Category I writing evaluation.
Expository and persuasive writing especially for students in education, fine arts, and language-oriented disciplines. Library research paper.

315. Exposition and Report Writing. (3:3:0) Home Study also. Prerequisite: successful completion of Category I writing evaluation.
Continuation of Engl. 115. Techniques for clarity and precision in factual writing. Long library paper. Recommended to prepare for Category III advanced writing evaluation.

316. Technical Writing. (3:3:0) Home Study also. Prerequisite: Engl. 115 or successful completion of Category I writing and reading evaluations.
Developing accuracy and skill in writing scientific pamphlets, articles, reports, and memoranda. Recommended to prepare for Category III advanced writing evaluation.

318R. Writing of Fiction. (3:3:0 ea.) Home Study also. Prerequisite: Engl. 218R or consent of instructor.
Creation of style and technique in prose fiction; discipline and practice of the writer. Individual consultation.

319R. Writing of Poetry. (3:3:0 ea.) Home Study also. Prerequisite: Engl. 218R or consent of instructor.
Creation of style and technique in poetry; discipline and practice of the poet. Individual consultation.

320. Introduction to the English Language. (3:3:0) Prerequisite: Engl. 115 or successful completion of Category I writing and reading evaluations.
Study of the English language, including phonology, morphology, and syntax, and their application to the problems of English language learning.

321. Study in English Grammars. (3:3:0) Home Study also. Prerequisite: Engl. 115 or successful completion of Category I writing and reading evaluations.
Modern grammars of English—descriptive, structural, and transformational—with study of the supporting linguistic principles.

322. Modern American Usage. (3:3:0) Home Study also. Prerequisite: Engl. 115 or successful completion of Category I writing and reading evaluations.
Current conventions and effective use of American English.

326. Semantics. (2:2:0) Prerequisites: Engl. 252, 312, 315, or 316.
General semantics, emphasizing the way in which words influence thought and behavior.

332. The Early English Novel. (3:3:0) Home Study also. (G-HA)
From the beginnings to the mid-nineteenth century, emphasizing Defoe, Richardson, Fielding, Smollett, Sterne, Scott, Austen, Trollope, Thackeray, the Brontës, and Dickens.

333. The Later English Novel. (3:3:0) Home Study also. (G-HA)
From the mid-nineteenth century to 1950, emphasizing Eliot, Meredith, Hardy, Conrad, Bennett, Galsworthy, Lawrence, Maugham, Joyce, Woolf, and Huxley.

335. The Nineteenth-Century American Novel. (3:3:0) Home Study also. (G-HA)
Cooper, Hawthorne, Melville, Twain, Howells, and James.

336. The Twentieth-Century American Novel. (3:3:0) Home Study also. (G-HA)
Selected from Dreiser, Cather, Lewis, Hemmingway, Faulkner, Steinbeck, Wolfe, Fitzgerald, Dos Passos, Salinger, Bellow, and Warren.

337. Contemporary Fiction. (3:3:0) (G-HA)
Trends, techniques, and themes in English and American fiction since World War II: Ellison, Camus, Kazantzakis, O'Connor, Malamud, Bellow, Mailer, and Updike.

338. (Engl.-CompLit. 430R) European Novel. (3:3:0) (G-HA)
Works of the principal European novelists, including Cervantes, Flaubert, Zola, Turgenev, Dostoevsky, Tolstoy, Mann, Kafka, and others, in English translation.

341. English Drama. (3:3:0) (G-HA)
The English drama (exclusive of Shakespeare) to the mid-nineteenth century, emphasizing dramatic modes and forms.

343. Modern English and American Drama. (3:0:0) (G-HA)
Major English and American dramatists since 1890.

350. The Bible as Literature. (2:2:0) Home Study also. (G-HA)

351. The Criticism and Appreciation of Literature. (3:0:0)
Critical theories and standards of value. Required for students who intend to do graduate study in English at BYU.

355. (Engl.-CompLit.) Classics of the Western World: Homer to Dante. (3:0:0) (G-HA)
A careful reading of major works of Homer, Aeschylus, Sophocles, Euripides, Virgil, and Dante in translation.

356. (Engl.-CompLit.) European Literature: Renaissance to Modern. (3:0:0) (G-HA)
European masterpieces of the Renaissance, neoclassicism, romanticism, realism, naturalism, and symbolism in translation.

359. The Short Story. (2:2:0) Home Study also. (G-HA)
Critical study of American, English, and European short stories, emphasizing those of the twentieth century.

361. Early American Literature. (3:3:0) (G-HA)
American writers to the mid-nineteenth century.

362. Later Nineteenth-Century American Literature. (3:3:0) (G-HA)
American writers from the mid-nineteenth century to the end of the nineteenth century.

363. American Literature from 1914 to Midcentury. (3:3:0) (G-HA)
American writers from World War I to midcentury.

364. The Literature of the American West. (2:2:0) (G-HA)
Important literature that utilizes frontier and western situations. Focuses on the special problems of writing about the West.

365. American Ethnic Literature. (2:2:0) (G-HA)
Representative writers of various ethnic groups in relation to their American settings and contemporaries.

366. Modern Poetry. (2:2:0) Home Study also. (G-HA)
Major twentieth-century English and American poets.

368. Literature of the Latter-day Saints. (2:2:0) (G-HA)
Literary study of journals, letters, sermons, short stories, novels, poetry, and drama arising out of the Mormon experience from Joseph Smith to the present.

371. English Literature to 1500: The Medieval Period. (3:3:0) (G-HA)
Emphasizes relationships to other early European literature.

372. English Literature from 1500 to 1660: The Renaissance Period. (3:3:0) (G-HA)
English drama, poetry, and prose of the Renaissance period including Milton but excluding Shakespeare.

373. English Literature from 1660 to 1780: The Classical Period. (3:3:0) (G-HA)
English literature from the Restoration through the Age of Reason to the beginnings of Romanticism, including Defoe, Swift, Fielding, Dryden, Pope, and Johnson.

374. English Literature from 1780 to 1832: The Romantic Period. (3:3:0) Home Study also. (G-HA)
Burns, Blake, Wordsworth, Coleridge, Scott, Lamb, Byron, Shelley, Keats, and the Brontës.

375. English Literature from 1832 to 1890: The Victorian Period. (3:3:0) (G-HA)
Carlyle, Ruskin, Tennyson, Browning, Arnold, Dickens, Thackeray, George Eliot, the Rossettis, Fitzgerald, Morris, Swinburne, and Meredith.

376. English Literature from 1890 to 1950. (3:3:0) (G-HA)
The aesthetic movement to the end of World War II, including Hardy, Housman, Shaw, Yeats, Conrad, Lawrence, Joyce, Galsworthy, Mansfield, and the Huxleys.

377. Secondary Teaching Procedures. (3:3:3) Prerequisites: Engl. 251, 252, 321, SecEd. 276.
For English teaching majors and minors. Prerequisite for Engl. 479.

381. Chaucer. (3:3:0) (G-HA)

382. Shakespeare. (3:3:0) (G-HA)
From six to eight major plays studied intensively.

383. Milton. (2:2:0) (G-HA)

391. Introduction to Folklore. (3:3:0) (G-HA)
Major types of folklore (e.g., myth, legend, folktale, folksong, custom, and belief); practical experience in collecting folklore.

392. American Folklore. (3:3:0) (G-HA)
American folk art and literature and the historical and cultural circumstances from which they developed.

395R. Eminent Authors. (3:3:0) Prerequisite: completion of Category I reading and writing evaluation.
Various significant authors studied each semester. For both majors and nonmajors.

396R. Issues and Insights in Literature. (3:3:0) Prerequisite: completion of Category I reading and writing evaluation.
Topics vary. Sample titles: "The Gothic Novel," "The American Dream," "The Business Novel," and "The Best Seller." For both nonmajors and majors.

410R. Editing for Publication. (2:3:0) Prerequisite: consent of instructor. Recommended: Engl. 322.
Lecture, discussion, and practice in the skills of readying manuscripts for publication; manuscript selection, consultation with authors, editing, layout, and proofreading.

415. Advanced Expository Writing. (3:3:0) Prerequisites: Engl. 252, 312, 315, and 316.
Extending and refining skills in factual writing.

418. Writer's Portfolio. (3:0:0)
To be taken by non-English majors desiring to complete their Category III intensive experience evaluation in writing. Permission required from chairman of English Creative Writing Committee.

420. Literature for Adolescents. (2:2:0) Home Study also.
Examination of literature written for adolescents and of effective methods of teaching literature in the secondary schools. Intended especially for English teaching majors and minors.

421. History of the English Language. (3:3:0)
Descriptive study of the language in stages of development, related to historical events. Required for students preparing for graduate study in English at BYU.

422. English Language Arts for Elementary Teachers. (3:3:0)
History of the English language, approaches to English usage, and modern developments in grammar, especially transformational grammar.

423. Teaching Composition. (2:2:0)
Principles of rhetoric and linguistics applied to teaching composition on the high school and college levels.

479. Secondary Student Teaching. (4-8:1:20-40) Prerequisite: Engl. 377.
For course description and fee, see Teacher Education.

490. Senior Seminar for English Majors. (2:2:0)

491. Senior English Examination. (0:0:0) Prerequisite: expectation of candidacy for B.A. in English.
Composite grade given, indicating student's performance on both the Undergraduate Record Examination and a departmental essay examination. All majors are required to register for Engl. 491 the semester they plan to take the senior examination. It is recommended that students take the senior examination the last semester before graduation.

500R. Eminent American Writers. (1-3:1-3:0 ea.)
Different writers treated each semester.

510R. Eminent English Writers. (1-3:1-3:0 ea.)
Different writers treated each semester.

518R. Advanced Creative Writing. (2:2:0 ea.) Prerequisite: Engl. 318R, 319R, or consent of instructor.
Writing of fiction, poetry, drama, and the essay; individual consideration of manuscripts; professional orientation. May be repeated for credit with consent of instructor.

520R. Studies in Theme and Form. (2-3:0:0 ea.)
Topics vary: theory of myth, Gothic fiction, Utopian literature, tragic and comic modes, etc.

529. Structure of Modern English. (3:3:0) Prerequisites: Engl. 321, Ling. 325, or consent of instructor.
Applying methods of linguistic science to the description of the phonology, morphology, and syntax of modern English.

590R. Individual Readings in English. (1-3:0:0 ea.)
Directed reading for majors and students on foreign tours. Available only through approval of adviser and department chairman.

599R. Cooperative Education: Editorial Internship. (Arr.) Prerequisite: one or more semesters as a graduate teaching assistant in English.

615. Bibliography and Methods of Research. (2:2:0)
Library resources as tools for literary study; areas in which literary research may be pursued. To be taken in the first regular semester of graduate study.

621R. Problems in the English Language. (3:3:0 ea.) Prerequisite: Engl. 421.
Study of a particular period in the history of the language or a particular aspect of it, such as morphology or syntax.

624. Old English. (3:3:0)
Study of Old English grammar and vocabulary in order to understand traditional syntactical patterns and to read various types of Old English prose and poetry.

625. Beowulf. (3:3:0) Prerequisite: Engl. 624.
Close reading of the poem in the original, emphasizing literary and cultural values.

626. Middle English. (3:3:0)
Detailed study of the principal dialects as illustrated in the literature of the period.

631. The English Novel. (3:3:0) Prerequisite: Engl. 332, 333, or consent of instructor.
Intensive analysis of literary values and techniques in selected novels. Not a survey course.

635. The American Novel. (3:3.0)
Various approaches to the novel emphasizing the formal. Focus may vary according to instructor and needs of students.

641. The English Drama. (3:3:0)
Short, intensive survey of English drama from its beginning, followed by independent research.

642R. Methods of Teaching College English. (1-3:0:3 ea.) Prerequisite: student instructorship in English or Humanities.
Theory and practice of teaching English on the junior college level.

644R. Directed Teaching of College English. (2:0:2 ea.) Prerequisites: teaching assistantship in English, Humanities, or Linguistics; concurrent enrollment in Engl. 642R.
Supervised, practical experience in teaching college English.

650. Literary Criticism. (3:3:0) Prerequisite: Engl. 351 or equivalent.
Modern critical theory and practice applied to specific literary works.

651R. Studies in Poetry. (3:3:0 ea.)

652R. Studies in Prose Nonfiction. (3:3:0 ea.)

661. Colonialism and Puritanism in American Literature. (3:3:0) Prerequisite: Engl. 361 or consent of instructor.
Intensive readings in major writers of the emerging American literary and cultural traditions before 1800.

662. Romanticism in American Literature. (3:3:0)
Rise and fruition of the romantic movement in American literature from Freneau to Lowell.

663A,B,C,D,E. Studies in Regional American Literature. (3:3:0 ea.) Prerequisite: a general background in American literature.
Focus on a different region each time offered.

664. Realism and Naturalism in American Literature. (3:3:0) Prerequisite: Engl. 362 or consent of instructor.
Dominant cultural and aesthetic trends since the Civil War.

666. American Literature, 1900-1950. (3:3:0) Prerequisite: at least one course in modern American literature.

667. Folklore. (3:3:0) Prerequisite: Engl. 391 or consent of instructor.
Directed study in folklore and folkways, emphasizing Mormon heritage and tradition. Collecting, analyzing, and editing.

669. Teaching English in the Secondary Schools. (2:2:0) Prerequisite: Engl. 377 or consent of instructor.
Literature, writing, grammar, and reading materials appropriate to English courses, and the effective use of these materials.

671. The Medieval Period in English Literature. (3:3:0)
A close reading in the original of a principal work, such as *Troilus and Criseyde*, *Piers Plowman*, or *Sir Gawain and the Green Knight*, emphasizing its relation to the other literature, culture, and history of the period.

672. The Renaissance in English Literature. (3:3:0) Prerequisite: Engl. 372 or consent of instructor.
Research in individual authors, styles, influences, and trends. Emphasis varies according to instructor.

673. Classicism in English Literature. (3:3:0) Prerequisite: Engl. 373 or consent of instructor.
An in-depth study of selected writers from 1660 to 1780.

674. Romanticism in English Literature. (3:3:0) Prerequisite: Engl. 374 or consent of instructor.
An intensive review of the major figures and trends from 1780 to 1832; individual research.

675. The Victorian Age in English Literature. (3:3:0) Prerequisite: Engl. 375 or consent of instructor.
Detailed analysis of literary genres, values, and techniques in representative works of the period. Not a survey course.

676. British Literature, 1900-1950. (3:3:0) Prerequisite: at least one course in modern British literature.

680. Contemporary Literature. (3:3:0) Prerequisite: at least one course in twentieth-century literature or consent of instructor.
Specific trends in literature and criticism; students may select areas of interest.

682. Problems in Shakespearean Scholarship and Criticism. (3:3:0) Prerequisite: Engl. 382 or consent of instructor.

695R. Individual Studies in English. (Arr.)
One hour enrollment each Fall and Winter Semester until prospectus has been filed; thereafter, one or more hours of Engl. 699R.

699R. Thesis for Master's Degree. (Arr.)
See options described with master's program in English.

728R. Studies in Rhetoric and Style. (3:0:0 ea.)

799R. Dissertation for the Ph.D. Degree. (1-8) Prerequisite: approval of the candidate's chairman.

European Studies

See World Affairs, European Studies.

Family and Local History Studies

Assistant Professors: Bloxham (Coordinator, 4312 HBLL), Johansson, Pratt, Wright.

Undergraduate Program

Genealogical instruction is a component of the newly organized Family and Local History Studies Program in the College of Social Sciences and is laterally connected with the History Department. This program provides training and practical research for persons who desire to do their own genealogy or to assist others. The program also provides training for church assignments in genealogy and satisfies academic requirements.

Credit and noncredit courses are available for a wide area, including introductory work, regional genealogy, seminars in applied research and special problems, and the LDS priesthood genealogy program. Genealogical instruction is available through daytime study on campus, Home Study and Evening School, Centers of Continuing Education, Special Courses and Conferences, and Education Week circuits.

Associate of Science Degree in Genealogy

The Associate of Science degree in genealogy is offered with two options in course work:
Option 1—Individual and Family Research or LDS Church Service
Option 2—Professional Genealogy

An associate degree in genealogy can serve as a stepping stone toward advanced studies, such as history, language, geography, library science, etc., or it can be a terminal degree for those whose goals do not include advanced degrees. It can also fill a need for the homemaker who might seek a respite from household duties or the retired person who desires to continue challenging and creative work. It can assist one in successfully completing the LDS Genealogical Department's genealogical accreditation examination or can simply increase one's knowledge and skills in genealogy. It is also evident that an increasing number of individuals are engaging in professional research with success, and family organizations are also seeking individuals with genealogical ability. In a similar vein, opportunities also exist in libraries, archives, and societies for persons with genealogical ability.

A candidate for the Associate of Science degree in genealogy must complete a minimum of 64 semester hours of course work. Half of the total constitutes general education and religion courses while the other half consists of courses in genealogy and supporting fields. At least 20 semester hours must be taken in residence, and a total of 18 hours may be completed through correspondence for Option 2. Option 1 may be completed entirely through Home Study and other off-campus instruction.

Genealogy Minor

A genealogy minor may be earned by completing 14 semester hours of genealogical course work. This should include an introductory or basic research course with at least 8 hours from a particular regional series. A minor must be approved by the major department before it can become effective.

Requirements for Graduation

Option 1—Individual and Family Research or LDS Church Service

A. Required Courses	Hours
Geneal.-RelC. 261 Introduction to Genealogy	2
Geneal. 300 series (any two regional courses in series)	6
Geneal. 400R	2
Hist. 300-400 series (two courses in area of interest)	6
Geography (one course in area of interest)	3
LIS 111 How to Use the BYU Library	1
Total	22
B. General education, religion, and electives	42
Total required and general	64

C. Recommended supporting courses and alternatives.
Geneal. 499R (Travel Studies) may be substituted for 400R.

The student interested in LDS Church service might profitably take additional courses in library science, computer science, or Church history.

Option 2—Professional Genealogy

A. Required courses	Hours
Geneal. 280	2
Geneal. 300 series (four regional courses in series	12
Geneal. 380	2
Geneal. 400R	4
Hist. 300-400 series (two courses in area of interest)	6
Geography (one course in area of interest)	3
Latin 317 Latin for Archivists and Genealogists	3
LIS 111 How to Use the BYU Library	1
Total	33
B. General education, religion, and electives	31
Total required and general	64

C. Recommended supporting courses and alternatives

Students whose major interests are in foreign countries might consider additional language courses while those in English-speaking countries might substitute appropriate courses in economics, political science, or literature.

Students whose interests in genealogy are as potential archivists and librarians might substitute appropriate courses in library science, computer science, or other related fields.

Students whose interests are in commercial genealogy might profitably take additional courses in business procedures or quantification. Such courses might include Acctg. 201 or 202; BusEd. 305 or 320; ComSci. 105; or courses in statistics.

Courses

261. (Geneal.-RelC.) Introduction to Genealogy. Home Study also. (2:2:1) (G-R)
Basic genealogical concepts, doctrinal background, essential record sources, research, genealogical forms and their uses, and starting one's book of remembrance.

280. Basic Genealogical Research. (2:2:1)
Fundamental research methods and procedures, including major genealogical sources, selected LDS sources, evaluation of evidence, and techniques of pedigree analysis general to any area.

310. North American Research 1. (3:2:1) Home Study also. Prerequisite: Geneal. 280 or consent of instructor.
Genealogical research methods and sources peculiar to the United States and Canada applied to the student's own pedigree.

311. North American Research 2. (3:2:1) Home Study also. Prerequisite: Geneal. 280 or consent of instructor.
Continuation of Geneal. 310, emphasizing regional genealogy.

320. British Research 1. (3:2:2) Home Study also. Prerequisite: Geneal. 280 or consent of instructor.
Research methods and sources peculiar to early Britain and modern England and Wales; sources before 1500, civil registration, parish registers, census, probates, and military and nonconformist records.

321. British Research 2. (3:2:2) Prerequisite: Geneal. 280 or consent of instructor.
Sources and genealogical techniques peculiar to Scotland and Ireland, including civil registration, parish registers, census, probates, military, and related records.

330. Continental European Research 1. (3:2:2) Prerequisite: Genealogy 280 or consent of instructor.
Research methods and sources peculiar to Scandinavia; essential language and historical background.

330R.. Continental European Research. (3:2:1 ea.) Home Study also.

331. Continental European Research 2. (3:2:2) Prerequisite: Geneal. 280 or consent of instructor.
Research methods and sources peculiar to Germanic-Slavic countries; essential language and historical background.

380. Paleography. (2:2:1) Prerequisite: Geneal. 280 or consent of instructor.
Interpreting and reading handwriting in documents from North America, Great Britain, and other European countries—16th through 18th centuries.

395R. General Research Abroad. (3:0:0 ea.)

400R. Seminar and Special Problems. (2:Arr.:Arr. ea.)
Practicum emphasizing solving personal genealogical problems.

499R. Travel Studies. (3-6:Arr.:Arr. ea.)

Family Resource Management

Associate Professors: Edwards, Hansen (Chairman, 1216-A SFLC).
Assistant Professors: Bastian, Bohn.
Instructors: Garrison, Harris, Slaugh, Vincent.

Undergraduate Program

The curriculum in the Department of Family Resource Management has been developed for the following purposes:

1. To educate and train students in three major options—consumer studies and financial and estate planning; equipment, foods, and housing; and home management—thereby preparing them for professional careers in private, governmental, business, and industrial organizations and for graduate study.
2. To encourage and enable all students to develop their managerial competencies, which are directly related to financial security, consumer satisfaction, and successful family living.

3. To serve students majoring in other fields, such as future home economics teachers, marriage counselors, and social workers, who need background and competence in management, family finance, consumer affairs, and/or family housing and equipment.

An adviser is assigned to each student upon admission to the program. Advisers assist students in planning the four-year course of study that will best serve their professional interests. Courses in the department are based on root disciplines in the social, biological, and physical sciences and in the humanities. Interdisciplinary study is emphasized in each option. Three major options are available, each offering a wide range of professional opportunities. Students must earn a C grade or higher for a course to count toward graduation in any FRM major option.

Option 1—Consumer Studies and Financial and Estate Planning

Option 1A—Consumer Studies

Courses Required (Total credit hours: 50)
FRM 210 (3), 220 (2), 240 (4), 260 (3), 335 (2), 336 (1), 360 (2), 399R (5-9), 460 (2), 465 (3), 475R (2), 490 (1).

Accounting
201 (3) Elementary Accounting

Business Management
241 (3) Introduction to Marketing

Communications
211 (3) Newswriting
335 (3) Public Relations

Economics
212 (3) Economics of the Market System

Health Sciences
370 (2) Consumer Health

Political Science
315 (3) American Legislative Systems
or
310 (3) The United States Political System,
311 (3) State and Local Government and Politics,
or
312 (3) Urban Government.

Option 1B—Financial and Estate Planning

Courses Required (Total credit hours: 49)
FRM 220 (2), 240 (4), 260 (3), 340 (3), 360 (2), 399R (5), 440 (2), 465 (3), 490 (1).

Accounting
201 (3) Elementary Accounting
202 (3) Elementary Accounting

Business Management
210 (3) Introduction to Investments
480 (3) Risk Management
487 (3) Real Estate Administration

Nine credit hours of electives are to be chosen from a list of courses available in the FRM Department (1216 SFLC).

Option 2—Equipment, Foods, and Housing

Courses Required (Total credit hours: 55)
FRM 210 (3), 220 (2), 240 (4), 260 (3), 320 (3), 330 (3), 335 (2), 336 (1), 360 (2), 370 (2), 399R (5), 430 (2), 475R (2), 490 (1).

Communications
211 (3) News Writing
230 (2) Introduction to Advertising

Food Science and Nutrition
235 (4) Basic Human Nutrition
236 (1) Laboratory Experience in Nutrition
264 (3) Introduction to Food Science
265 (2) Introduction to Food Science Laboratory
340 (2) Meal Management

Interior Environment
237 (3) Rendering
or
340 (3) Materials and Components of the Interior
240 (3) Introduction to Interior Environment

Design Technology
104 (2) Drafting for Interior Environment

Option 3—Home Management

Courses Required (Total credit hours: 56)
FRM, 220 (2), 240 (4), 260 (3), 320 (3), 335 (2), 336 (1), 370 (2), 420 (2), 340 or 440 (2), 475R (2), 490 (1).

Child Development and Family Relationships
210 (3) Child Development
330 (3) General Introduction to Women's Studies
360 (3) Achieving Success in Marriage
365 (3) Achieving Success in Parenthood

Clothing and Textiles
260 (3) General Textiles
300 (2) Clothing the Family

Food Science and Nutrition
110 (2) Principles of Food Preparation
115 (2) Essentials of Nutrition
340 (2) Meal Management

Interior Environment
240 (3) Introduction to Interior Environment
340 (3) Materials and Components of the Interior

Nursing
288 (1) Family Health and Home Nursing

Minor in Family Resource Management

A student can obtain a minor in FRM by taking FRM 220 (2), 240 (4), 260 (3), and two or three other FRM classes which provide for a total of 15 credit hours.

Courses

210. (FRM-AgHrt.-FSN) Family Food Production, Storage, and Economics. (3:3:0) (G-BS)
Vegetable and fruit garden production, quality food preservation and storage, and the family economics involved.

220. Management for Individuals and Families. (2:2:0) Home Study also.
Values, decision making, human resource development, and supervision.

240. Family Money Management. (2-5:2-5:0) Home Study also.
Financial goals, resources, and methods for individuals and families. Developing consumer competencies in purchasing goods, services, and insurances. Investments, savings, and estates.

260. Family and Consumer Economics. (3:3:0)
The family as an economic unit, emphasizing resource management, consumption, and production activities.

320. Work Simplification and Space Planning. (3:3:0) Prerequisite: FRM 220.
Organization, work simplification, and functional planning of household work space for family goals.

330. Housing and Lighting. (3:3:1)
Social, psychological, and managerial aspects of housing; planning, selecting, and financing home environments; indoor and outdoor lighting.

335. Household Equipment. (2:2:0)
Selection, construction, operation, and care of household equipment. Laboratory experience.

336. Household Equipment Laboratory. (1:0:3) Prereq-

uisite: concurrent registration in FRM 335.
Testing performance and comparing features and costs of household equipment.

340. Family Taxation and Estate Planning. (3:3:0) Prerequisite: FRM 240 or consent of instructor.
State and federal taxation, wills, trusts, and estate planning in family financial systems.

360. Consumer Behavior and Protection. (2:2:0) Home Study also. Prerequisite: FRM 260 or consent of instructor.
Consumers' role in the marketing system, decision making, evaluation of information sources, and protection programs.

370. Residence Management. (2:2:6) Home Study also. Prerequisites: FSN 340, FRM 220, 335.
Applying management principles to ethnic and socioeconomic needs of families. Practicum provides for living experience in varying situations.

399R. Cooperative Education. (5-9:Arr.:Arr. ea.) Prerequisites: consent of instructor and 240 cooperative education hours.
On-the-job experience.

420. Advanced Home Management. (2:2:0)
In-depth study of home management theory, the goal-setting process, and decision making in individual and family living.

430. Advanced Household Equipment. (1-2:0:4) Prerequisite: FRM 335, 336.
Study and experimental problems of fabric-care and food-related appliances.

440. Family Financial Analysis. (2:2:0) Prerequisite: FRM 240 or consent of instructor.
In-depth analysis of family financial statements, money management dynamics, and financial institutions.

460. Economics of Consumption. (2:2:0) Prerequisites: FRM 360 and Econ. 110 or consent of instructor.
Understanding consumer behavior at both the individual and aggregate levels; empirical investigations of consumer behavior.

465. Consumer Law and Public Policy. (3:3:0) Prerequisite: FRM 360 or consent of instructor.
Consumer protection, rights, and responsibilities under existing laws. Current issues, proposed legislation, deficiencies, and enforcement problems.

475R. Special Topics in Family Resource Management. (1-3:1-3:0 ea.) Home Study also. Prerequisites: for FRM major—consent of instructor; for Home Study associate degree major emphasizing FRM—approval of this course with faculty adviser as final project.
Individual study for qualified students.

490. Senior Seminar. (1:1:0) Prerequisites: senior standing and consent of instructor.
Review and presentation of current research findings.

Family Studies

(See Home and Family Development, Family Studies.

Food Science and Nutrition

Associate Professors: Freeman, Hill, Huber (Chairman, 2218-B SFLC), Johnson.
Assistant Professors: Bates, Franz, Walker.
Instructors: Larson, Lloyd, O'Nion.

Undergraduate Program

The Department of Food Science and Nutrition offers degrees with the following options: (1) food science, (2) medical dietetics, and (3) nutrition.

Food science and nutrition majors may register in either the College of Family Living or the College of Biological and Agricultural Sciences.

For all options offered by the department, high school preparation should include chemistry, physics, and math. A broad background in other areas, including English and biology, is helpful.

For majors in food science and nutrition, a minimum of 34 hours in departmental courses is required. A minor requires 15 hours of courses, including FSN 264, 265, 235, and 236 (or 237). Grades below C are not permitted for majors or minors.

Students may complete the food science curriculum in three years if two spring-summer sessions are used to complete the necessary course work. Food science majors must complete all the courses listed in Option 1. Graduates in Option 1 are prepared for vocations in the food industry which include quality control, research, product development, food processing, plant management, and inspection/regulatory functions.

A major in medical dietetics combines clinical experience in hospitals and community agencies with academic course work, beginning with the junior year. Students who successfully complete this major with a B.S. degree are eligible for membership in the American Dietetic Association and may take a national exam to become registered dietitians. Students must be formally admitted to the program through the Department of Food Science and Nutrition prior to the beginnning of their junior year. Students planning to follow this major should contact the program director (2218 SFLC) by the beginning of their sophomore year. It is anticipated that the dietetics program will be expanded in the near future to include a major in food systems management. Additional information regarding this new option can be obtained from the Department of Food Science and Nutrition (2218 SFLC).

The third option offered by the Food Science and Nutrition Department is nutrition emphasizing community nutrition, international nutrition, and preparation for subsequent graduate work.

Suggested sequences for taking courses follow. Refer to the general education programs section of this catalog for additional requirements.

Option One—Food Science

Freshman	**Hours**
*Psych. 111	3
*Bot. 101	3
Math. 110	3
Chem. 105, 106	8
FSN 210	3
*AgEcon. 112	3

Sophomore	**Hours**
Chem. 252	5
Math. 109	4
Physics 105, 106, 107, or 201 and 202	7
FSN 264, 265	5
Micro. 321, 322	4

Junior	**Hours**
FSN 235, 237, 350	9
Micro. 361	3
Chem. 481	4
*Chem. 484	2
Stat. 221	3

Senior	**Hours**
FSN 450, 461, 462, 465	14
AnSci. 328*	2
*Micro. 381	2

*Recommended

Option Two—Medical Dietetics

Freshman	**Hours**
Chem. 105, 106	8
Math. 110	3
Sociology or Psychology	3
Micro. 321	3

FRM 240 or Economics	2-3
Zool. 260	2

Sophomore	**Hours**
Zool. 261	4
Chem. 252	5
FSN 235, 237, 264, 265	10

Junior	**Hours**
FSN 300	5
Chem. 481	4
FSN 237	1
Zool. 361	4
FSN 356	5
FSN 435	4
FSN 374	3
FSN 458	2

Senior*	**Hours**
FSN 400	3
Stat. 221	3
FSN 494R	2
General education and electives	8-9
FSN 425	4
FSN 456	8
FSN 490	2

*One semester (fall or winter) of the senior year will be spent in Salt Lake City.

Option Three—Nutrition

Students may also choose a nutrition option with an emphasis in chemistry as preparation for graduate work in nutrition. This is an applied nutrition option to prepare students to influence the nutritional health of their families and for employment in paraprofessional health jobs.

Courses Required (Total credit hours: 46-51)
FSN 210 (3), 235, 236 (5), 264, 265 (5), 310 (2), 340 (2), 373 (2), 400 (3), 425 (4), 435 (4), 490 (2), 494R (1-3); FRM 240 (2-5), 335, 336 (3); CDFR 210 (3); An. Sci. 325 (5).

Graduate Program

Program. Master of Science (M.S.).

Entrance Examinations Required. None.

Application Consideration Dates. April 1 and October 15.

Entry Times. Fall or Winter Semester.

Master of Science

Prerequisites. Undergraduate major in food science and nutrition or a closely related field, with basic courses in the physical and biological sciences.

Fields. Food science and nutrition.

Minors Permissible. Biochemistry recommended; other minors available in consultation with major professor; Option 2.

Requirements. Minimum of 24 semester hours plus thesis (6-hr. min.); a statistics course.

Required Courses. Nutrition: FSN 635, 636, 637, 691; Food Science: FSN 652, 654, 656, 690.

These programs are designed to prepare students for Ph.D. work in nutrition or food science, college teaching, and positions in industry.

Courses

110. Principles of Food Preparation. (2:1:2)
Open to all students. Techniques of food preparation for maximum retention of nutritive value.

115. Essentials of Nutrition. (2:2:0) Home Study also.
Concepts of human nutrition and their application to achieving and maintaining optimum health.

210. (FSN-AgHrt.-FEHM) Family Food Production, Storage, and Economics. (3:3:0)
Vegetable and fruit garden production, quality food preservation and storage, and the family economics involved.

235. Basic Human Nutrition. (4:4:0) Prerequisites: Chem. 252 or 281, Zool. 105 or 261.
Basic principles.

236. Laboratory Experience in Nutrition. (1:1:2) Prerequisite: concurrent registration in FSN 235.
For nonmajors. Food choices, practice in methods of nutrition education.

237. Experiments in Nutrition. (1:0:3) Prerequisite: concurrent registration in FSN 235.
Students conduct experiments to illustrate nutrition principles.

264. Introduction to Food Science. (3:3:0) Prerequisites: Chem. 252 or 281, Micro. 121 or 321, concurrent registration in FSN 265.
Chemical and physical properties of foods, applied to preparation and processing.

265. Introduction to Food Science Laboratory. (2:0:6) Prerequisite: concurrent registration in FSN 264.

292. International Field Work in Food Science and Nutrition. (1-5:Arr.:Arr.) Prerequisite: FSN 115 or 235 and consent of instructor.
Special topics, in an international setting, with faculty supervision.

300. Clinical Nutrition 1. (5:Arr.:Arr.) Prerequisites: FSN 235 and consent of instructor.
Role of the professional dietitian, including techniques of dietary interviewing, nutritional assessment, and dietary modification in disease.

310. Food Patterns of Various Cultures. (2:2:0) Prerequisite: FSN 115 or consent of instructor.
Social, religious, economic, and health significance of food customs; analyzing programs to improve nutrition. Recommended for prospective health missionaries.

☐ **Animal Science 328. Meat Processing Methods.** (2:1:3)

340. Meal Management. (2:1:3) Prerequisites: FSN 110 and 115 or FSN 265 and 235.
Organization and management of time, energy, finance, and nutrition in planning and preparing family meals.

350. Food Analysis. (4:2:6) Prerequisite: Chem. 252.
Principles, methods, and instrumentation involved in the physical and chemical analysis of raw and processed foods.

356. Clinical Nutrition 2. (5:Arr.:Arr.) Prerequisites: FSN 300 and consent of instructor.
Biochemical and physiological abnormalities in diseases requiring dietary modification; application to nutritional care in a clinical setting.

☐ **Microbiology 361. Food and Dairy Microbiology.** (3:2:3)

374. Quantity Food Production and Service. (2-3:1-2:3-6)

399R. Cooperative Education. (1-9:Arr.:Arr. ea.) Home Study also. Prerequisite: consent of instructor.
On-the-job experience.

400. Community Nutrition. (3:3:4) Prerequisite: FSN 235 or consent of instructor.
Public health nutrition applied to community programs.

425. Nutrition in Growth and Development. (4:Arr.:Arr.) Prerequisite: FSN 356.
Interaction of nutrition and genetics during pregnancy, lactation, early infancy, and childhood.

435. Experimental Human Nutrition. (4:4:0) Prerequisites: FSN 235, Chem. 481, and concurrent registration in Chem. 484.
Metabolic interrelationships among nutrients.

450. Food Chemistry. (4:4:0) Prerequisites: FSN 264, 265; Chem. 481, 484
Chemistry of the chief components of food and the effects of processing and storage.

456. Medical Dietetics. (8:2:15) Prerequisites: FSN 356, 435; senior status.
Clinical experience with nutritional problems through intensive work with hospitalized patients.

458. Management in Dietetics. (2:2:15) Prerequisites: previous or concurrent registration in FSN 456 and OrgB. 321.
Study and observation of processes.

461. Food Processing. (4:3:3) Prerequisites: FSN 264, 265.
Water treatment, use of enzymes, thermal processing, fluid flow, radiation, refrigeration, freezing, dehydration, and psychometrics.

462. Food Quality Preservation. (3:2:3) Prerequisites: FSN 264, 265.
Preserving food quality during processing and storage; factors affecting food acceptability, packaging of foods, food quality control, food laws and regulations.

465. New Food Product Development. (3:1:6) Prerequisites: FSN 461 and 462 or equivalent.
Ingredients and methods used to develop new foods.

490. Seminar. (2:2:0) Prerequisite: 10 credit hours in FSN or consent of instructor.

492. Fieldwork in Food Science and Nutrition. (6-8:0:20-24) Prerequisites: 12-15 credit hours in FSN and consent of department chairman.

494R. Special Problems in Food Science and Nutrition. (1-3:0:3-9 ea.) Home Study also. Prerequisites: for FSN major—consent of instructor and department chairman, 14 hrs. of FSN courses; for Home Study associate degree major emphasizing FSN—approval of this course with faculty adviser and department chairman as final project.
Independent study for qualified students.

635. Protein and Amino Acid Nutrition. (3:3:0) Prerequisite: FSN 435 or equivalent
Offered Fall Semester.

636. Energy Balance and Vitamin Nutrition. (3:3:0) Prerequisite: FSN 435 or equivalent.
Offered Fall Semester.

637. Mineral Nutrition. (3:3:0) Prerequisite: FSN 435 or equivalent.
Offered Spring Term.

652. Carbohydrates and Their Reactions in Foods. (3:3:0) Prerequisite. FSN 450 or equivalent.
Sugars, higher saccharides, starches, pectins, gums, hemicelluloses, celluloses, and their derivatives; functions and reactions in foods.

654. Proteins and Their Reactions in Foods. (3:3:3) Prerequisite: FSN 450 or equivalent.
Plant and animal proteins and their functions and changes during food processing; food enzyme properties.

656. Food Lipids and Their Reactions. (3:3:0) Prerequisite: FSN 450 or equivalent.
Lipids and their interaction in foods with other components of the food system and/or the surrounding environment, lipid processing techniques

690. Seminar in Food Science. (1-2:1-2:0)

691. Seminar in Nutrition. (1-2:1-2.0)

697R. Research. (1-3:Arr.:Arr. ea.)

699R. Master's Thesis. (6-9:Arr.:Arr. ea.)

Genealogy

See Family and Local History Studies.

General Studies

Professor: Rohde.
Associate Professors: Herlin (Chairman, 3126 HBLL), Mayfield.
Assistant Professor: Alvord

Services for General Studies (Guided Studies) Students

Advisement

Through the College of General Studies Advisement Center (140 BRMB), students are assigned an adviser who will assist them in planning their academic program to correct deficiencies, establish a success pattern, and thereby attain regular student status. They may also receive the advisement services provided for students with an open major.

Classes

GenSt. 110 is designed to help students develop efficient study techniques, including study-type reading, listening and note-taking, time scheduling and use, preparing for and taking examinations, and other study-related skills. The class is geared to those who feel a need for more efficient study methods, whether they are experiencing academic difficulties or not. As a part of the class, students do an extensive self-study of their reading, writing, and basic arithmetic skills as well as look closely at their own motivation and attitudes toward academic success. While open to all students, GenSt. 110 is required of students who are admitted to the University on academic warning or probation (Guided Studies students).

Other classes are intended to assist students who have problems in spelling and grammar (GenSt. 15), who desire to read more rapidly and efficiently (GenSt. 121), or who want more fully to take advantage of university Resources and programs, including various preparation options for general education evaluations (GenSt. 190).

Learning Services Center

Through the Learning Services Center (3126 HBLL) specific skills taught in the classes are offered in a modular, auto-tutorial format for students who desire specific help but do not wish to register for a full semester's work. Work in study skills and attitude modification can thus be tailored to the needs of any student. General education Category I assistance is also available to students, enrolled or not in general education classes

Courses

15. Remedial Spelling. (0:2:0)
Spelling rules, prefixes, suffixes, roots, and use of the dictionary

110. Effective Study and Adjustment to College. (1:2:0) Home Study also
Budgeting time, taking notes, reading, listening, using the library, taking examinations, and acquiring motivation and concentration.

121. College Developmental Reading. (1:1:1) Home Study also for law students only
Improving speed, comprehension, and vocabulary

190. Reference Groups. (0:2:0)

Geography

Professor: Layton (Chairman, 167-D HGB).
Associate Professors: Grey, Horiuchi, Hudman, Jackson, Stevens.
Assistant Professor: Hinckley.

Undergraduate Program

The Geography Department offers a variety of programs centered around spatial analysis and tailored to meet the speical needs of individual students. Programs lead to completion of the B.S. and M.S. degrees, and also the Associate of Science degrees in planning-cartographic technology and in travel-tourism. Graduates are employed in jobs with a wide variety of titles, such as planner, commodities analyst, travel agent, resources specialist, cartographer, industrial location analyst, climatologist, photo interpreter, and intelligence specialist, as well as that of geographer. Employment is available in many areas of private business and industry and in a variety of government agencies at all levels.

Geography provides for many students an excellent minor covering areas of spatial analysis that apply directly to various major fields. Since all phenomena occur in some place, an understanding of places and spatial relationships is critical. An effort is made in all geography classes to have students from other disciplines apply information and methodology in spatial analysis directly to their particular special interest.

Because the program in geography is directed toward a variety of interests and employment possibilities, it is critical that all students consult with departmental advisers in planning their program or in selecting courses to fill specific needs. Minors and other students, as well as majors, are encouraged to seek advisement from departmental faculty. Students should also be aware that many employment opportunities require training at the graduate level.

Geography Teaching Major

Courses for certification in elementary and secondary education with an emphasis in geography are listed in the Education section of the catalog. Geography may also be used by graduate students in the junior college certification program. Students planning on certification for teaching should check carefully with the Teacher Clearance Office regarding their program.

Planning

Students desiring a stronger preparation for regional, city, environmental, resource, or other planning or industrial location, or who require a strong background in urban studies and spatial analysis for a career in government, business, or industry or entry into a graduate professional program should take the sequence listed below:

Geography core: Geog. 211, 212, 231, 310, 312, 504, 598

Associated geography group (8 hours selected in consultation with adviser): Geog. 101, 301, 302, 332, 401, 441, 495, 522, 533

Tool courses: Math. 109 or Sociol. 205

Associated supporting courses (22 to 24 hours to be selected in consultation with adviser, from classes such as those in the following suggested list to meet the student's specific need):

AgEcon. 350R, 355, 390
CivEng. 565, 573
Econ. 330, 352, 552
Geog. 512 and regional geography (2 or 3 hours for those planning on working in a particular foreign area)

PolSci. 311, 312, 330
RecEd. 410
Sociol. 245, 370

General Emphasis

Students desiring a general program with a liberal arts emphasis as a preprofessional degree or one that may be structured in consultation with an adviser as preparation for additional training in graduate school, military service, area analysis, diplomatic service, tourism, planning, business, or government should take the following sequence:

Lower division: Geog. 101, 102, 120, 211, 231.

Upper division: Geog. 450, 504, 598, and electives selected in close consultation with the student's adviser to make a total of 32 hours.

Cartography Emphasis

Students who plan to seek employment in the area of cartography should work out an individual program with a departmental adviser. Employment in some areas of cartography requires a strong background in mathematics, surveying, and computer science as well as in cartographic drafting and design.

Travel-Tourism Emphasis

The travel and tourism program is designed to provide a travel- and tourist-related background for those who wish to pursue careers in the travel field, particularly in travel offices, travel councils, chambers of commerce, public carriers, oil companies, and other travel-related industries. It combines a broad background of University-related classes with specific travel and tourism experiences.

Those desiring additional training beyond the associate degree in travel-tourism should follow the program listed below. Specific classes should be selected in consultation with the departmental adviser so that the work may be tailored to fit the particular need of each student. Consultation is particularly critical in arranging the cooperative education hours when the student will work off campus with a travel agency or council.

Geography (21-26 hours)

Geography core: Geog. 101, 120, 212, 250, 399R (total: 11 hours)

Choice of two regions: Geog. 450, 455, 460, 465, 470, 480, 502R (total: 4-6 hours)

Choice of two systematics: Geog. 231, 301, 302, 441 (total: 4-6 hours)

Related Courses (14 hours)

Acctg. 201
BusEd. 101
BusMgt. 241, 341
OrgB. 321

Related Alternatives (10 hours minimum)

Comms. 230
Hist. 110, 111
Hum. 201, 202
Physics 177
PolSci. 170, 363
RecEd. 301, 337
Sociol. 223, 245

Associate Degree in Planning-Cartographic Technology

The associate degree as a planning-cartographic technician is designed to prepare individuals for employment in a host of agencies: federal, state, and local; and in private firms involved in planning and formulating maps for many purposes. The program provides instruction in the basic skills of cartography, field work, and visual presentation and provides a general background in related areas applicable to planning and related fields.

For those individuals who may wish additional education, this degree serves as the base for a four-year degree in geography with emphasis in either planning or cartography.

Optional hours should be filled with courses selected, in consultation with the departmental adviser, to reinforce a particular skill or interest related to the student's individual program and goals. See the general education programs section of this catalog for additional requirements.

First Year	F	W
Geog. 101, 102	4	
Geog. 211		2
DesTech. 111	2	
Econ. 110		3
Physics 177		3
PolSci. 110		3

Second Year	F	W
Sociol. 205	3	
CivEng. 211 (optional)		2
Geog. 212	2	
Geog. 312		3
Geog. 302, 310 or 332	2-3	
Bot.-Zool. 250	3	

Associate Degree in Travel-Tourism

The associate degree in travel-tourism is designed to provide the skills necessary for the beginning level of employment in the industry. The travel-tourism program also provides the background in skill and tools to continue in a four-year emphasis directed toward depth in management, tourism, and travel studies. A suggested sequence of courses follow (see the general education programs section for general education requirements):

First Year	F	W
Geog. 101, 120	3	3
BusEd. 220	3	
Acctg. 201		3
Physics 177		3

Second Year	F	W
Geog. 212, 250	2	3
BusMgt. 241	2	
Geog. 301 or 302		2-3
Sociol. 223		3
Communications	2	
Hist. 110		3

Geography Minor

It is suggested that students wishing to present a formal minor in geography work out a program suited to their specific interest and need in consultation with the chairman of the Geography Department.

Graduate Program

Program. Master of Science (M.S.).

Entrance Examination Required. Graduate Record Examination (general and advanced section on geography).

Application Consideration Dates. Same as Graduate School deadlines.

Entry Times. Any regular registration.

Master of Science

Prerequisites. Undergraduate minor in geography or its equivalent. Students going into area studies should have a strong language background. Those emphasizing planning, cartography, or geography in business or industry should have background in mathematics or statistics.

Fields. Cartography, general geography, urban and regional planning.

Minors Permissible. Option 1 or Option 2

Requirements. Minimum of 24 semester hours plus thesis (6-hr. min.—699R).

Required Courses. Geog. 601, 620, 630, 698R, 699R

This program is designed to provide a general background at the graduate level for either a terminal degree or preparation for more advanced work, and to allow specialization according to the student's specific interest in a particular area within the discipline.

Courses

101. Introduction to Geography. (3:3:0) Home Study also. (G-SS)

The physical environment. Distributions and interrelationships of climates, landforms soils, and natural resources, and their significance to man

102. Introduction to Geography Laboratory. (1:0:2) (G-SS) Prerequisite. previous or concurrent enrollment in Geog. 101.

120. Geography and World Affairs. (3:3:0) Home Study also. (G-SS)

Survey of the world, stressing geography of major political regions.

211. Introduction to Maps and Air Photos. (2:1:2) (G-SS)

Maps and air photos as tools; sources, applications, and practice in their use

212. Geographics. (2:1:2)

Preparation of cartographic materials for visual presentation.

231. Economic Geography. (3:3:0) Home Study also (G-SS)

Origin, importance, and movement of major agricultural and mineral commodities in world affairs.

250. Travel and Tourism Patterns and Analysis. (3:3:0) (G-SS)

Description and survey of field, including statistics, patterns, and impacts.

299R. Cooperative Education. (Arr.)

On-the-job experience.

300. Introduction to Geographical Literature. (1:1:0) (G-SS)

Basic source materials in geography. To be taken as early as possible in major and minor programs

301. Introduction to Cultural Geography. (2:2:0) (G-SS)

Culture distributions and their relationship to existing geographic phenomena.

302. Geography of Urban Environment. (2:2:0) (G-SS)

Introduction to geographic techniques and concepts in analysis of urban America

310. Land Use Planning. (3:2:2) (G-SS)

Introduction to land use concepts, practical and theoretical problems, activities, and techniques

312. Map Drawing. (3:1:4) (G-SS)

Maps as a means of recording information; preparing maps for reproduction and publication.

332. Resource Management. (2:2:0) (G-SS)

Geographical analysis of the world's resource patterns.

340. Look at Your World—Applied Geography for Nonmajors. (1-3:Arr.:Arr.) Prerequisites. Geog. 211, regional geography, and systematic geography

Finalization for Category III evaluation

350. Travel Planning, Rates, and Tariffs. (3:3:0)

Procedures in operating travel industry, trip planning, ticketing

351. North America. (3:0:0)

399R. Cooperative Education. (Arr.)

On-the-job experience.

401. Geography of Climates. (3:3:0) (G-SS) Prerequisite. Geog. 102 or consent of instructor

Elements, controls, distribution, and classification of the earth's climates

405. Geography of Landforms. (2:2:0) (G-SS) Prerequisites. Geog. 101 and 102 or consent of instructor

Elements of landforms, their distributions, and their cultural significance

441. Political Geography. (3:3:0) (G-SS)
Physical, political, economic, and social elements of political geography and analysis of the power structure of the world's major powers.

450. North America. (3:3:0) Home Study also. (G-SS)
Climates, landforms, natural resources, agriculture, industries, and peoples of the United States and Canada.

451. Historical Geography of North America. (3:3:0) (G-SS)
Significance of climate, landforms, location, resources, and other geographic factors in the settlement of North America.

453. Geography of Utah. (2:2:0) (G-SS)
Cultural and physical characteristics—their distribution and interrelationships.

455. Latin America. (3:3:0) Home Study also. (G-SS)
Physical and cultural geography.

460. Europe. (3:3:0) (G-SS)
How man is utilizing the natural and human resources of Europe. Emphasizes human geography of major political regions.

465. USSR and Its Satellites. (3:3:0) (G-SS)
Physical features, resources, agriculture, industries, and distribution of peoples.

470. Asia. (3:3:0) (G-SS)
Geography of one-third of the earth and two-thirds of its people.

480. Australia and New Zealand. (2:2:0) (G-SS)

493. Special Problems. (1-2:1-2:0) (G-SS)
For majors only.

494. Biogeographical Analysis. (3:0:0)
Credit for successful challenge of Category III evaluation in phytogeography and ecosystems.

501. Geography for Teachers. (3:3:0) Home Study also.
Systematic approach emphasizing source materials, teaching methods, tools, and techniques.

502R. Seminar in Regional Geography. (2:2:0 ea.)

504. Geographic Field Techniques. (2:1:2)
Experience applied to physical, social, and biological sciences.

512. Cartography. (3:1:4) Prerequisite: Geog. 312.

520. Spatial Analysis. (3:3:0)
Using quantitative and location-allocation models to determine and account for location of economic, social, religious, and public institutions in their service regions.

522. Urban Geography. (3:3:0)
Distribution, development, internal land use patterns, and functions of urban areas in the world's economy.

533. Industrial Geography. (3:3:0)
Analysis of distribution of major industries, emphasizing planning and location theory.

580. Geography of Underdeveloped Areas. (2:2:0) Prerequisite: consent of instructor.
Physical, economic, and human geography as it affects the world's underdeveloped areas, emphasizing future development possibilities.

598. Seminar in Techniques of Research and Presentation. (2:2:0)
Proseminar in scholarly use of geographical sources, leading to a substantial paper in oral and written form.

599R. Cooperative Education. (Arr.)
On-the-job experience.

601. Physical Geography. (2:1:2)

620. Cultural Geography. (2:1:2).

630. History and Philosophy of Geography. (2:2:0)
Development of geographical thought. Major concepts concerning nature, scope, and methodology of the discipline.

690R. Readings. (1:0:2 ea.)

695. Special Problems. (1-2:1-2:0)

698R. Seminar in Systematic Geography. (2:2:0 ea.)
Detailed investigation of selected topics.

699R. Master's Thesis. (6-9:Arr.:Arr. ea.)

Geology

Professors: Best, Bissell, Brimhall, Bullock, Bushman, Hamblin, Hintze, Petersen (Chairman, 258 ESC), Phillips, Rigby.
Associate Professors: Baer, Miller.

Undergraduate Program

Geology offers an unusually wide variety of attractive career possibilities to students whose interests lie within the physical or life sciences. Graduates in geology may anticipate a position, with better-than-average pay, in the petroleum or the mineral industry, with a university, or with a governmental agency. They often enjoy opportunities for worldwide travel and for leadership in rapidly developing areas of geology, such as oceanography or environmental geology, with their choice of balance between outdoor field studies and indoor laboratory investigation.

The Department of Geology offers the bachelor's degree in geology, earth science, and geological engineering. The geology major consists of a well-balanced core curriculum leading to a professional career in geology. The earth science major is for prospective secondary school teachers and for others interested in geology but not planning a professional geology career. The engineering geology major leads to an engineering career.

Geology Major

The four-year program leading to the Bachelor of Science degree in geology requires of all students a standard core of geology courses representing all major phases of geology, with supporting work in chemistry, physics, mathematics, and biology. The nonspecialized curriculum is designed to provide maximum flexibility for early employment or a broad, well-rounded background for graduate study. Capable students are strongly encouraged to plan for study beyond the bachelor's degree and to select those elective courses which will strengthen their area of special interest.

It is expected that a student majoring in geology will have met the general entrance requirements of the College of Physical and Mathematical Sciences and will complete all general education requirements of Brigham Young University as outlined in the general education programs section of this catalog Each student seeking the bachelor of science degree in geology must successfully complete the following courses or their accepted equivalent at another institution:

Recommended Curriculum for the Bachelor of Science Degree in Geology

Freshman Year	**F**	**W**
Geol. 111, 112	4	4
Math. 112, 113	4	4
Chem. 105 (or 111)		4 (3)

Sophomore Year	**F**	**W**
Chem. 106 (or 112)	4 (3)	
Geol. 480**, 351	3	3
Physics 121, 122	3	3
Engl. 316		3
Electives*		

Junior Year	**F**	**W**
Geol. 311, 352, 370	9	
Geol. 310		1
Physics 221		3
Electives*		

Spring Term, Junior Year	Sp
Geol. 312, 313, 410.	7

Senior Year	F	W
Geol. 411**, 451*, 460*		9
Physics 222	3	
Electives*		

*Geology majors are advised to take ComSci. 131 and Stat. 221. Those interested in paleontology should take Bot. 105 and Zool. 114 and 202.

**Only three of the four senior geology courses (i.e., Geol. 411, 451, 460, and 480) are required for graduation. Major students may take all four if they so desire, or they may select only three in accord with their individual interest.

Geology Minor

Any student who has successfully completed 16 semester hours of any geology courses may request a minor in geology.

Earth Science Major

Earth science combines the more descriptive phases of geology with those of astronomy, meteorology, and geography for those who seek careers in secondary science education or those with nonprofessional aspirations in geology.

Teachers preparing in earth science must fulfill the requirements outlined below, including those courses required for state certification. Prospective teachers who plan to use geology as a composite major or minor should refer to the Education section of this catalog for the required curriculum.

All students majoring in earth science are required to take 52 credit hours from the following list of courses, with a minimum in each group as follows. 20 hours in geology, 12 hours in physics, 8 hours in chemistry, 4 hours in mathematics, and 5 hours in geography. This leaves 3 hours for elective choice in any one of the 5 areas.

Geology: 104 (3), 111 (4), 112 (4), 311 (3), 312 (1), 313 (2), 351 (3), 352 (3), 410 (4), 411 (3), 460 (3), 470 (3).
Physics and Astronomy. 127 (3), 137 (3); 100 (3), 110 (3), or 201 (5); and 202 (5); or 121 (3) and 122 (3) (10 hours).
Chemistry: 105 (4), 106 (4).
Geography: 101 (3), 211 (2), 401 (3), 504 (2).
Mathematics: 109 (4), 110 (4), 112 (4), 113 (4).

Prospective earth science teachers are required to take—
Geology 502 (2); 7 hours of zoology from 105 (3), 201 (4), 202 (4), 203 (4), 344 (4); 5 hours of botany from 101 (3), 105 (3), 205 (3), 210 (3).

For those intending to take additional classes in mathematics, chemistry, or physics, or who plan to secure a master's degree in any phase of science education, it is strongly recommended that Math. 112 and 113 be taken. Physics 121 and 122 or 201 and 202 should be taken in preference to 100 and 110.

The following education courses must be taken by those wishing to fulfill state teaching requirements SecEd. 276 (4), SecEd 376R (5), and SecEd 476 (14). (For additional information consult the Education section of the catalog.)

Total hour requirements for graduation in earth science.

A. Earth Science Teaching Degree
  52 hrs major-minor
  12 hrs biological science
  23 hrs education
  6 hrs. electives

B. Terminal Degree in Earth Science
  52 hrs. major-minor
  35 hrs. electives (upper div.)

Recommended Curriculum for the B.S. Teaching Degree in Earth Science

Freshman Year	F	W
Geol 111		4
Math. 110	5	
Chem. 105, 106	4	4
Sophomore Year	**F**	**W**
Geol. 112		4
Geol. 351, 352	3	3
Physics 100	3	
Junior Year	**F**	**W**
Geol. 502		2
Geog 401	3	
Physics 127, 137	3	3
Senior Year	**F**	**W**
Bot 205		3
Zool. 344		4
Geology electives		4

See the general education programs section of this catalog for additional requirements.

Engineering Geology Major

The curriculum for geological engineering is a four-year professional program leading to the degree of Bachelor of Science. It includes substantial amounts of mathematics, physics, and civil engineering aimed at training students for careers in industrial and environmental geology.

Required Curriculum for Engineering Geology

Freshman Year	F	W
Geol. 111 (or 330)	4 (3)	
Geol. 112		4
Math. 110, 112	5	4
Sophomore Year	**F**	**W**
Math. 113, 214	4	3
Chem. 105, 106	4	4
Physics 121, 122	3	3
Junior Year	**F**	**W**
Geol. 351, 352	3	3
Geol. 311	3	[illegible]
Geol. 451		3
Math. 321	3	
CivEng. 201		2
Physics 221, 222	3	3
Spring Term, Junior Year	**Sp**	
Geol. 312, 313, 410	7	
Senior Year	**F**	**W**
Geol. 470, 460	3	3
CivEng 212	2	
CivEng 303, 332	3	3
CivEng 341, 431	3	3

Suggested elective courses, as the student's schedule permits: AgHrt. 282, 303; Geol 411, 515, 520, 535, 540, 561, 562, 563.

Graduate Program

The Department of Geology offers graduate study leading to the Master of Science and Doctor of Philosophy degrees in geology within five major areas of specialization: paleontology, stratigraphy and sedimentation; structural and field geology; mineralogy, geochemistry and petrology; and economic geology. In addition, the Master of Arts degree in earth science teaching is available.

It is assumed that any student seeking any graduate degree in geology at Brigham Young University will have had undergraduate preparation essentially equivalent to that required by the Geology Department of BYU; otherwise, remedial undergraduate work may be required.

Programs. Master of Science (M.S.), Master of Arts in earth sciences (M.A.), Doctor of Philosophy (Ph.D.)

Application Requirements. Scores on Graduate Record Examination—verbal, quantitative, and advanced geology.

Application Consideration Dates. Same as Graduate School deadlines. Application for teaching assistantships and other financial aid for the following school year must be received by the Geology Department before March 1.

Entry Times. Fall or Winter Semesters only.

Student Load Limits. The normal load for a student who is not working is 12 hours per semester or 6 hours per term. The maximum allowable load for student teaching assistants working 20 hours a week is 10 hours per semester. For those working 10 hours a week, the maximum credit load is 12 hours.

Master of Science

Prerequisite. Undergraduate degree in physical or biological sciences. Arrangements to make up any undergraduate deficiencies will be made in consultation with the Geology Department graduate coordinator.

Fields. Economic geology; mineralogy, geochemistry, and petrology; paleontology; stratigraphy and sedimentation; structural and field geology.

Minors Permissible. Option 1 or 2.

Requirements. Minimum of 24 semester hours plus a published thesis (6-hr. min.—699R).

Master of Arts

Prerequisite. Undergraduate degree in physical or biological sciences. Arrangements to make up any undergraduate deficiencies will be made in consultation with the Geology Department earth science coordinator.

Field. Earth science teaching.

Minors Permissible. Any combination of physical or biological science courses listed below.

Requirements. (1) A minimum of 12 hours in geology and 12 hours from the associated fields of astronomy, botany, chemistry, geography, mathematics, physics, zoology; (2) a comprehensive written examination of graduate course work prior to the thesis defense; (3) a thesis representing research work in the field of earth science under faculty adviser's supervision for a total of 6 hours; (4) a final oral examination on the research thesis.

Required Courses. Selections are to be made from the following courses:

Geol. 507, 510, 512, 540, 577, 584, plus upper-division courses not previously taken
Bot. 321, 331, 440, 455, 510, 526, 539, 550
Chem. 351, 352, 353, 514, 598R
Geog. 405, 601
Math. 300, 301, 302, 371, 501, 502, 629
Physics 300, 527, 528, 536, 537
Zool. 321, 325, 457, 543, 545, 546, 547, 591R, 601

Doctor of Philosophy

Prerequisites. Master's degree in geology or equivalent course work.

Fields. Economic geology; mineralogy, geochemistry, and paleontology; stratigraphy and sedimentation; structural and field geology.

Minors Permissible. Outside the department or fields within the department, as approved by the applicant's committee.

Requirements. Approved courses, demonstrated competence in research, and a dissertation (18-hr. min.—799R).

Courses

101. Introduction to Geology. (3:2:2) Home Study also. (G-PS)
Cultural focus in physical geology for nonscience students. Concurrent or subsequent enrollment for credit in Geol. 102 is not permitted.

102. Introduction to Geology Laboratory. (1:0:2) (G-PS)
Common rocks and minerals laboratory, including local field trips.

103. Life of the Past. (3:3:0) Home Study also. (G-PS)
Cultural focus on historical geology for nonscience students. Fossils studied.

104. Environmental Geology. (3:2:2) (G-PS)
Geological and environmental consequences of urban development and industrial pollution.

111. Physical Geology. (4:3:2) (G-PS)
Materials, structure, and surface features of the earth and the geologic processes involved in their development.

112. Historical Geology. (4:3:2) (G-PS) Prerequisite: Geol. 111.
Concepts applied to North American continental development.

286. Prehistoric Vertebrates. (3:3:0) Recommended: basic course in geology and zoology.
Major groups of prehistoric vertebrates, emphasizing reptiles (especially dinosaurs) and mammals. Scientific and cultural values considered.

305. Rocks and Minerals. (2:2:0)
Origin, classification, and identification of the earth's common raw materials. For nonmajors.

306. Landforms and Their Origin. (3:3:2) Home Study also. (G-PS) Prerequisite: Geol. 101 or 111.
Earth's landscape features and their origins. For nonmajors.

310. Geologic Illustration. (1:0:1) (G-PS) Prerequisite: completion of or concurrent registration in Geol. 311.
Using a variety of media, leading to publishable illustrative material.

311. Structural Geology. (3:2:2) (G-PS & ML) Prerequisite: Physics 121 or 201.
Geometric, kinematic, and dynamic analysis of tectonic features.

312. Geological Literature and Scientific Report Writing. (1:1:0) Prerequisite: successful completion of the Junior English Proficiency Exam or equivalent.
Index and sources of geologic information. Preparation of professional geologic reports.

313. Geologic Methods. (2:1:2) (G-PS) Prerequisite: Geol. 311.
Practice in fieldwork and use of field instruments.

330. Geology for Engineers. (3:2:3) (G-PS)
Geological processes and materials bearing on engineering practices.

351. Mineralogy. (3:2:2) (G-PS) Prerequisite: completion of or concurrent registration in Chem. 105 or 111.
Physical and crystallographic properties of minerals.

352. Petrology. (3:1:4) (G-PS) Prerequisites: Geol. 351 and Chem. 105.
Investigation of rocks by hand specimen and thin-section.

370. Stratigraphy and Sedimentation. (3:2:2) (G-PS) Prerequisite: Geol. 352.
Sediments, sedimentary rocks, and principles of stratigraphy.

410. Summer Field Camp. (4:0:40) Prerequisite: Geol. 313.
Five-week camp required of all geology and geological engineering majors.

411. Geomorphology. (3:2:2) (G-PS) Prerequisite: Geol. 112.
Interpretive analysis of landforms and their geologic and environmental significance.

451. Optical Mineralogy. (3:2:2) (G-PS) Prerequisite: Geol. 351.
Fundamentals of optical crystallography and mineral identification techniques.

460. Economic Geology. (3:2:2) (G-PS) Prerequisite: Geol. 352.
Principles, genesis, and localization of ore deposits, including laboratory study of ore minerals.

480. Introduction to Paleontology. (3:2:2) (G-PS) Prerequisite: Geol. 112.
Distribution, morphology, paleoecology, evolution, and stratigraphic significance of organisms in the geologic record.

502. Geology for Teachers. (2:2:0) Prerequisite: Geol. 101 and 102, and 103, or 111.
Materials and methods useful for junior and senior high school earth science teachers.

507. History of Geology. (2:2:0)
Historical development of concepts and philosophy distinctive to geology. Offered alternate years.

510. Conducted Field Trips. (1-3:Arr.:Arr.) Prerequisite. Geol. 101, 103, or 111.
Credit varies with number and length of trips. 3 hours credit maximum.

511. Geomorphology. (3:3:0)

512. Geology of North America. (4:3:2)
Region-by-region study of the area geology, physiography, and geologic development.

515. Photogeology. (3:1:4)
Use of parallax bar and various instruments applicable to contact print photos.

520. Petroleum Geology. (3:2:2) Prerequisite: Geol. 311 and 470.
Offered alternate years.

535. Groundwater. (4:4:0)
Offered alternate years.

540. Plate Tectonics. (3:3:0) Prerequisites: Geol. 311 and 352.
Physics of earth's interior and its bearing on plate tectonics. Offered alternate years.

545. Geochemistry. (3:3:0) Prerequisite: consent of instructor.
Geological materials and processes from a chemical point of view. Offered alternate years.

546. Isotope Geology. (2:2:0)

551. Advanced Mineralogy. (3:2:2) Prerequisites: Geol. 351 and 451; Physics 202.
Crystallography, structure, and crystal chemistry of major mineral groups studied by X-ray diffraction and other methods.

552. Instrumental Methods. (3:1:4) Prerequisites: Geol. 352 and 451.
Modern laboratory methods for analyzing rocks and minerals; spectroscopy, X-ray diffraction, electron microscopy, microscopic petrography.

560. Introduction to Exploration Geophysics. (4:3:2) Prerequisites: Geol. 311, Physics 222.
Principles of earth physics applied to exploration for petroleum and mineral deposits; computer modeling. Offered Fall Semester.

561. Ore Deposits. (4:4:0)
Origin, classification, and distribution of metallic ore deposits.

562. Industrial Minerals and Rocks. (3:3:0) Prerequisite: Geol. 460.
Occurrence, distribution, and use of nonmetallic earth materials. Offered alternate years.

563. Mining Geology. (3:3:0) Prerequisite. Geol. 460.
Ore search and appraisal; assembling geological data; mining techniques; ore treatment. Offered alternate years.

574. Principles of Stratigraphy. (3:2:2) Prerequisite: Geol. 470.
Offered alternate years.

575. Precambrian and Paleozoic Stratigraphy. (3:3:0)
Synthesis of regional stratigraphic relations in North America. Offered alternate years.

576. Mesozoic and Cenozoic Stratigraphy. (3:3:0)
North American Mesozoic and Cenozoic rocks and key fossils. Offered alternate years.

580. Invertebrate Paleontology (Protozoans through Brachiopods). (4:3:2)
Morphology, paleoecology, evolution, and stratigraphic significance of invertebrates. Offered alternate years.

581. Invertebrate Paleontology (Mollusks through Hemichordates). (4:3:2)
Continuation of Geol. 580. Offered alternate years.

582. Biostratigraphy. (3:2:2) Prerequisite: Geol. 480 or 581.
Fossils in their stratigraphic setting and principles of paleontologic chronology. Offered alternate years.

583. Palynology. (3:2:3) Prerequisite: consent of instructor.
Preparation, identification, and application of modern and fossil palynomorphs.

586. Vertebrate Paleontology. (4:3:2) Prerequisites: Geol. 103 or 112; Zool. 105 or BioAg. 200.
History of vertebrate fossils. Field trips required.

591R. Seminar. (1:1:0 ea.)

655. Igneous Petrology. (5:4:3) Prerequisite: Geol. 552.
Origin and crystallization behavior of magmas, emphasizing crystal-liquid relations in simple experimental systems. Offered on demand.

656. Metamorphic Petrology. (3:2:3) Prerequisite. Geol. 552.
Subsolidus mineral equilibria, thermodynamic concepts, geologic variables in metamorphic systems, and graphical analysis of mineral assemblages. Offered on demand.

670. Sedimentation and Sedimentary Tectonics. (3:2:2)
Offered alternate years.

671. Sedimentary Petrology—Carbonate Rocks. (3:3:2)
Offered alternate years.

672. Sedimentary Petrology—Clastic Rocks. (3:2:2) Prerequisite: Geol. 470.
Offered alternate years.

685. Paleoecology. (4:3:2) Prerequisite: Geol. 480 or 581
Ancient environments and ecology of major taxonomic groups.

696R. Reading and Conference in Geology. (1-4:1-4:0 ea.)

697R. Directed Field Studies. (1-6:Arr.:Arr ea.)

698R. Research. (1-4:1-4:0)

699R. Master's Thesis. (6-9:Arr.:Arr ea.)

797R. Directed Field Studies. (1-6:Arr. Arr. ea.)

799R. Doctoral Dissertation. (Arr.)

Government

Distinguished Professor: Grow.
Professors: Farnsworth, Hickman, Hillam (Chairman, 320 KMHW), Jagchid, Mabey, Melville, Midgley, Paxman, Riggs, Thompson, Tullis.
Associate Professors: Bulkwalter, Morrell, Reynolds, Slover, Snow, Sorensen, Taylor, Timmins
Assistant Professors: Beal, Bohn, Fletcher, Williams.

The curriculum is organized into three majors: political science, public policy studies, and justice administration. The curriculum for the political science major provides students with a broad liberal arts education and prepares students for graduate study, law school, public and business administration, and public service. The curriculum for the public policy major prepares students for careers as program evaluation analysts in public affairs. The curriculum for the justice administration major prepares students for careers in crime prevention, law enforcement, corrections, and other agencies of the justice system. It is anticipated that some students in public policy and justice administration will pursue further study at the graduate level; however, both are primarily career majors.

Political Science Undergraduate Program

Requirements for an Undergraduate Major

Satisfactory completion of 30 credit hours of courses—including 110*, 300, 302 (Econ. 110 highly recommended), and others as indicated below—and submission of a senior paper or completion of a project approved by the department (499 is specifically designed to help the student meet the paper requirements). No D credit may be counted toward the 30-hour total.
*310 may be substituted for 110

Undergraduate Curriculum and Tracks

The undergraduate curriculum is organized into six distinct tracks. Students entering the department may select from one of the following, each of which has listed additional required and recommended courses:

Liberal Arts. Required 150, 170. Recommended: minimum of two specialized fields (e.g. international relations, comparative politics, American politics, public administration).

Preparation for Teaching in Secondary Schools. Required. 150, 170. Recommended minimum of two specialized fields. (See the Education section of this catalog for details regarding certification.)

Preparation for Graduate Study in Political Science. Required: 301, 303. Recommended: 150, 170, 499, 500R.

Preparation for Law School. Required 301. Recommended: 360 or 361, 364, 368, 500R, and courses in American institutions.

Preparation for Graduate Public and Business Administration. Required: 330. Recommended. courses in American institutions.

Preparation for a Career in Public Affairs. Required: 330. Recommended: 310, 311, 313, 500R.

Related Study for Political Science Majors

No minor is required for students majoring in political science except in connection with secondary teaching certification. Instead, majors should plan, in consultation with an adviser, a broad program within the social sciences.

(1) Study is encouraged in each of the social sciences: economics, sociology, anthropology, geography (especially 441), psychology, and history.
Another means of achieving breadth is by taking a concurrent major or a minor in Asian studies, European studies, international relations, or Latin American studies.
(2) A research composite of courses emphasizing quantitative analysis is advisable, including Sociol. 205 or Stat. 221, ComSci. 132, and Phil. 205, as well as other relevant social science courses.
(3) Those emphasizing either foreign governments or international affairs should have a foreign language.
(4) In satisfying the general education requirement in American history and government, majors are encouraged to take PolSci. 101 or Hist. 101 rather than Hist. 170. For those entering Winter Semester 1977 and after, preparation for the new citizenship education competency can be achieved as a part of other departmental requirements.

Cooperative Education

In the junior or senior year, majors are encouraged to participate in the Washington Seminar and other internship opportunities at the state and local level of government and politics.

Requirements for an Undergraduate Minor

Bachelor-degree candidates taking a minor in political science are required to complete satisfactorily a minimum of 15 credit hours of courses offered by the department. The minor should emphasize breadth (all three introductory courses, 110, 150, and 170, plus two upper-division courses) or depth (any one of the introductory courses plus four related upper-division courses).

Graduate Program

The department also offers programs leading to the Master of Arts degree in political science, consisting of study in 500-level courses and in 600-level seminars. The latter are offered to graduate students only.

Program. Master of Arts (M.A.).

Entrance Examinations Required. Students will submit to the Government Department a research paper completed during their undergraduate program which reflects their English competency and research skills. All international students whose native language is not English are required to take the TOEFL.

Application Consideration Dates. Same as Graduate School.

Entry Times. Any regular registration.

Master of Arts

Prerequisites. Fifteen undergraduate semester hours in political science or equivalent as approved by committee.

Field. Political science.

Requirements. Twenty-four semester hours plus thesis (6-hr. min.), a written comprehensive exam upon or near completion of course work and prior to writing thesis, and an oral defense of the thesis.

Required Courses. Graduate students' program will be determined in consultation with their sponsor prior to registration. Two seminars and the Graduate Colloquium (645R) are required.

Juris Doctorate/M.A. in Political Science

A combination of a law (Juris Doctorate) and M.A. degree in political science can be arranged for qualified students who have been admitted to both the J. Reuben Clark Law School and the BYU political science graduate programs. Students interested in this combined program should contact the political science graduate coordinator for details.

Up to 9 hours of appropriate political-science-related law courses can be applied toward degree requirements for an M.A. in political science. A course program will be developed in consultation with a departmental adviser.

Courses

105R. Current Affairs. (1:1:0 ea.) (G-SS)
Survey of current events and implications in economics, sociology, politics, and international relations.

110. American Government and Politics. (3:3:0) Home Study also. (G-SS)
Origin and development of federal Constitution; national, state, and local governments and politics with their environments.

☐ **Economics 110. Economy, Society, and Public Policy.** (3:3:0)

150. Comparative Government and Politics. (3:3:0) (G-SS)
Patterns of European, Asian, Latin American, and other political systems and politics.

170. Introduction to International Politics. (3:3:0) Home Study also. (G-SS)
Basic forces, practices, institutions, and foreign policies of major powers, and problem areas in international politics.

260. Law and the Citizen. (3:3:0)
Basic legal obligations and rights likely to be encountered in daily living.

300. Political Inquiry. (3:2:1) (G-SS)
Methodology of political science, including theory and techniques of qualitative and quantitative research designs.

301. The Logic of Political Inquiry. (3:3:0)
Comparative analysis of the logic of scientific and normative inquiry and the resulting logical structure.

302. Moral Foundations of Politics. (3:3:0) (G-SS) Home Study also.
General historical introduction to the major expressions of political philosophy.

303. Empirical Political Theory. (3:3:0)
Background, development, and critique of empirical theories about systems, functionalism, elites, etc., in the political process.

304. Western Political Heritage—Ancient. (3:3:0) (G-SS)
History of political philosophy, beginning with the pre-Socratics and ending with Hobbes.

305. Western Political Heritage—Modern. (3:3:0) (G-SS)
History of political philosophy, beginning with Hobbes and ending with the recent revival of political philosophy.

306. Asian Political Thought. (3:3:0)
Survey of both traditional and modern Asian thought.

307. American Political Heritage. (3:3:0) (G-SS) Home Study also.
American political and legal ideas from the colonial period to the present.

308. Theories of Human Freedom. (3:3:0) Home Study also.
Whole scope of human freedom at the metaphysical, individual, social, and political levels.

309R. Topics in Political Philosophy. (3:3:0 ea.) (G-SS)
Topics include contemporary political philosophy; Asian political thought, logic, and ethics; Marxism; and political theology.

310. The United States Political System. (3:3:0) (G-SS)
National government and politics in the context of American society as a whole.

311. State and Local Government and Politics. (3:3:0) (G-SS) Home Study also. Prerequisite: PolSci. 110.
. Relation of state and national governments, forms of state governments and politics, types of municipal governments and their operation.

312. Urban Government. (3:3:0)
Growth, development, dynamics, and problems.

313. Parties and Pressure Groups in the U.S. (3:3:0) (G-SS) Prerequisite: PolSci. 110.
Organization and methods of action.

314. The United States Presidency. (3:3:0) (G-SS)
The American president and vice-president, White House office, Bureau of the Budget, Cabinet, and National Security Council.

315. American Legislative Systems. (3:3:0) (G-SS) Prerequisite: PolSci. 110.
Structure and organization of Congress and state legislative bodies; nature of business transacted and conflict resolution.

318R, 319R. Topics in American Government and Politics. (3:3:0 ea.) (G-SS)
Topics include intergovernmental relations, national security aspects of government, and minority group politics.

329R. Topics in Political Behavior. (3:3:0 ea.) (G-SS)
Topics include psychology of politics, sociology of politics, and political socialization.

330. Introduction to Public Administration. (3:3:0) (G-SS) Home Study also.
Organization and operation of government, relationship of administration to other branches of government, and types of control over administration.

350. Political Systems of the USSR and Eastern Europe. (3:3:0)
The Communist Party and Soviet government, Marxist-Leninist ideology, and formulation and execution of policy, including social and economic impact.

351. British Government and Politics. (3:3:0)
Examination of the origin and operation of British political institutions as they relate to contemporary British society.

352. Ethnic and Class Conflict. (3:3:0)
Nature and causes of political stress across ethnic and class boundaries in rapidly changing societies in Africa, Latin America, Middle East, and U.S.

353. Government and Politics of China and Southeast Asia. (3:3:0)
Structure and behavior of politics, emphasizing contemporary problems. For both political science and Asian studies majors.

354. Government and Politics of Japan and Korea. (3:3:0)
Structure and behavior of politics, emphasizing contemporary problems. For both political science and Asian studies majors.

355. Canadian Government and Politics. (3:3:0)
Growth and development of Canada and the operation of her government.

356. French, German, and Italian Government and Politics. (3:3:0)
Structure and dynamics of politics as well as current political thought in these countries.

357. Political Systems of the Middle East. (3:3:0)
Social, philosophical, and religious impact on Middle East political institutions in an era of modernization and conflict.

358. Politics and Society in Latin America. (3:3:0)
Contemporary issues in Latin America's search for political order and economic development; modernization and political stress, military and politics, church and state, and U.S. foreign policy.

359R. Topics in Comparative Government and Politics. (3:3:0 ea.) (G-SS)
Topics include elections, legislatures, political parties, revolution, politics and social change, and local government.

360. Constitutional Law—American Federal System. (3:3:0) (G-SS)

361. Constitutional Law—Rights and Immunities. (3:3:0) (G-SS)

363. Administrative Law of the U.S. (3:3:0) (G-SS)
Legal setting for administrative bodies and judicial control of administrative action. Cases read and discussed

364. Jurisprudence. (3:3:0) (G-SS)
Problem approach to ancient and modern legal philosophies, emphasizing the nature of justice and the relation of law to morality.

368. Anglo-American Legal Institutions. (3:3:0) (G-SS)
Origins and development of common law and equity, the writ system, court systems, basic legal terms, and the anatomy of a lawsuit.

370. Theory of International Relations. (3:3:0) (G-SS) Prerequisite: PolSci. 170; concurrent registration in PolSci. 300.
Actions and interactions of national units of action on the global system.

371. International Behavior. (3:3:0)
Alternative sources of international relations, especially social-psychological approaches, game theory, simulations, and systems analysis. Emphasizes theories and methods of analysis.

373. International Law. (3:3:0) (G-SS) Prerequisite: PolSci. 170.
Nature and function of international law; recognition, succession, jurisdiction rights, and immunities of states; nationality and jurisdiction over nations.

374. Regional Integration. (3:3:0)
Political integration in selected regions of the world: Europe, Latin America, Central America. Emphasizes theories.

375. International Organizations. (3:3:0) (G-SS) Prerequisite: PolSci. 300 recommended.
Survey in a historical and political perspective.

378. Inter-American Relations. (3:3:0)
Political, economic, and cultural issues arising from relationships between Latin American nations and the United States.

379R. Advanced Studies in International Relations. (3:3:0 ea.) (G-SS)
Topics include arms control, environment, population development, crisis, and strategy.

381. U.S. Foreign Policy. (3:3:0)
How American foreign policy is formulated and implemented; analyzing themes of American foreign policy and their critics.

382. Foreign Policy Analysis. (3:3:0)
Contemporary theories and techniques.

383. Soviet Foreign Relations. (3:3:0)
Development of USSR's foreign relations, especially since 1945, with major areas of the world; formulation and execution of foreign policies.

384R. Foreign and International Relations. (3:3:0 ea.)
International relations of countries in Asia, Middle East, Western Europe, Latin America, and Africa.

386. World Communism. (3:3:0)
Emergence and development of communist politics in relation to Marxist and Fabian socialism, fascism, anticolonialism, and Western democracy.

399R. Field Study: Washington Seminar, Campaign Management, State and Local Internship, Utah State Legislature. (Arr.)
On-the-job experience.

☐ **Geography 441. Political Geography.** (3:3:0)

☐ **History 474. U.S. Diplomatic History.** (3:3:0)

☐ **History 476. American Constitutional History to 1865.** (3:3:0)

☐ **History 477. American Constitutional History since 1865.** (3:3:0)

498R. Directed Individual Study. (1-2:0:1-2 ea.) (G-SS) Prerequisites: senior status and permission of department chairman and instructor.

499. Senior Seminar. (3:2:0) (G-SS) Prerequisite: next-to-last or last undergraduate semester in major.
Research in field of concentration and writing an extensive seminar paper. For majors who plan on graduate study in political science.

500R. Field Study. (1-9:Arr.:Arr. ea.) (G-SS) Prerequisites: Pol. Sci. 110 or 310, 300.
Observation and participation in the process of government.

501R. Advanced Topics. (3:3:0 ea.) (G-SS)
For graduate students only.

599R. Field Study: Washington Seminar, Campaign Management, State and Local Internship, Utah State Legislature. (Arr.)
On-the-job experience.

☐ **Public Administration 600. Fundamentals of Public Administration.** (1-3:3:0)

☐ **Public Administration 602. Organizational Analysis.** (3:3:0)

☐ **Public Administration 603. Public Personnel Administration.** (3:3:0)

☐ **Public Administration 604. Public Finance Administration.** (3:3:0)

☐ **Public Administration 608. Public Issues and the Administrator.** (3:3:0)

☐ **Public Administration 630. Urban Management.** (3:3:0)

☐ **Public Administration 631. County Management.** (2:2:0)

☐ **Public Administration 640. Introduction to Planning.** (2:2:0)

645R. Graduate Colloquium (½:1:0 ea.)
For occasional papers and departmental needs.

690R. Seminar in Political Philosophy. (1-3:1-3:0 ea.) Prerequisite: related advanced course(s).

691R. Seminar in Politics. (1-3:1-3:0 ea.) Prerequisite: related advanced course(s).

692R. Seminar in Empirical Theory. (3:3:0 ea.) Prerequisite: related advanced course(s).

695R. Seminar in Comparative Government and Politics. (1-3:1-3:0 ea.) Prerequisite: related advanced course(s).

696R. Seminar in Public Law. (1-3:1-3:0 ea.) Prerequisite: related advanced course(s).

697R. Seminar in International Relations. (1-3:1-3:0 ea.) Prerequisite: related advanced course(s).

698R. Directed Individual Study. (1-2:1-2:0 ea.) Prerequisite: permission of graduate committee and instructor.

699R. Master's Thesis. (6-9:Arr.:Arr. ea.)

Public Policy Studies Undergraduate Program

Satisfactory completion of 33 credit hours—including 6 credit hours of substantive electives.
The public policy courses are:

Prerequisites

Econ. 110 Economy, Society, and Public Policy
PolSci. 110 American Government and Politics
Math. 105 College Algebra
Stat. 221* Principles of Statistics
PolSci. 300** Political Inquiry
Engl. 315 Exposition and Report Writing

Junior Year

First Semester
Econ. 375 (3) Public Choice in a Market Economy
Comms. 305 Discussion and Conference Leadership

Second Semester
PolSci. 330 (3) Public Administration
PolSci. 360 Constitutional Law—American Federal System
Engl. 415 Advanced Expository Writing
Elective (3)

Senior Year

Third Semester
PubPol. 331 (3)
PolSci. 307 American Political Heritage
Elective (2)

Fourth Semester
PubPol. 334 (3), 332 (3)
Substantive elective (2)

Substantive Elective Courses

A public policy studies major must have, in addition to the required courses indicated above, a minimum of 6 hours of substantive training. This can be satisfied either by having a concurrent major or by specializing in—
Minority Affairs Planning
Environmental Issues
Land Use Planning

Research Series

Courses:
PubPol. 300, 500R
☐ Econ. 110 Economy, Society, and Public Policy
☐ Math. 110 Precalculus Mathematics
☐ PolSci. 110 The American Political System
☐ Stat. 221 Principles of Statistics
☐ PolSci. 300 Political Inquiry
☐ Sociol. 300 Methods of Research in Sociology
☐ PolSci. 309R Topics in Political Theory
☐ PolSci. 330 Public Administration
☐ PolSci. 339R Topics in Public Affairs
☐ Econ. 375 Public Choice in a Market Economy
☐ Econ. 410 Theory of Price
☐ Stat. 501 Statistics of Research Workers 1
☐ Stat. 502 Statistics of Research Workers 2

Courses

301. Policy Analysis. (3:3:0)
Policy research, measurement problems, data sources, and data collection techniques.

331. Public Policy Process. (3:3:0) (G-SS)

332. Policy Analysis. (3:3:0)
The nature of policy research, identification of program objectives, problems of measurements, sources of data, and techniques of data collection.

334. Public Ethics. (3:3:0)
Sources of values, areas of conflict with government policy, means of value accommodation.

335. Natural Resources Policy. (3:3:0)
Processes and politics of making and administering public policies relating to natural resources. Peculiar problems of analysis and evaluation.

339R. Topics in Public Policy. (3:3:0)
Indian tribal politics, environmental politics, and U.S. overseas operations.

539R. Topics in Public Policy. (3:3:0)
Topics include Indian tribal politics, environmental politics, and U.S. overseas operations.

595. Public Policy Practicum (Arr.) (G-SS)

Justice Administration Undergraduate Program

The Justice Administration (JA) program provides instruction in the three major segments of our criminal justice system (i.e., law enforcement, courts, and corrections) and furnishes an educational focus upon the causes, environment, detection, and prevention of crime and the motivation, apprehension, and treatment of offenders.

The goals of the program are—

1. to provide specific prerequisites and appropriate background for students who intend to pursue graduate study and research in the field of justice administration, court management, and correctional administration;

2. to provide students with the background and skills necessary to qualify them for employment and leadership in the expanding field of justice administration, including federal, state, local, industrial-institutional, and private agencies of law enforcement, criminal justice, and paralegal studies;

3. to provide instruction to students who wish to acquire an understanding of the processes of the administration of justice as a cultural part of their higher education and to assist in preparing them for valuable service in a wide variety of activities.

Degrees are offered at the associate, bachelor's, and master's degree levels.

Associate Degree

Those students desiring to pursue the associate degree should specifically enroll in the associate degree program in JA. The degree is earned upon the completion of the following two-year curriculum, plus general education requirements as listed in the general education programs section of this catalog. The degree may be completed in less than two years if some of the courses are taken during the Spring or Summer Terms. Although the degree is designed for those who do not have the time to complete the bachelor's degree, all the courses can be applied toward the bachelor's degree should the student wish to continue on toward the higher degree at a later time. No D credit will be accepted in any of the JA courses.

An associate degree in justice administration may be taken entirely by Home Study. For more information on this program, contact the Home Study office.

First Year	**F**	**W**
JA 101, 102	3	3
PolSci. 110, 311	3	3
Sociol. 112	3	
*Chem. 100 or Micro. 121		3

Second Year	**F**	**W**
JA 301, 302	3	3
Health 121 or 430, Comms. 102	2	2
*Geog. 211 or Physics 177 or Math. 121		2-3
Psych. 111	3	
*Econ. 110, Sociol. 111, Anthro. 105, or Psych. 350	3	
Physics 100		3

*Three credit hours of JA 299R may be substituted for any course in these groups of courses provided that general education requirements are met.

Bachelor's Degree

Bachelor-degree candidates majoring in JA are required to complete satisfactorily a minimum of 40 credit hours of courses indicated below. No D credit may be counted toward this total.

Required Courses (15 hours)

The following courses must all be taken: JA 101, 102, 301, 302, 304.

Elective Courses (5 hours)

A minimum of 5 credit hours must be taken from the following courses: JA 299R, 300R, 303, 305, 306, 307, 326, 333, 399R, 401, 402, 500R, 501, 502, 503, 504, and 599R

Required Supportive Courses (20 hours)

The following courses must all be taken, except that only one of the two psychology courses is required: Health 430; PolSci. 300, 311, 330; Psych. 111 or 350; Sociol. 112, 381.

Elective Supportive Courses (15 hours)

A minor is not required for the JA major. In its place students shall select in consultation with their adviser 15 credit hours from the following courses: Anthro. 105; Econ. 110; Geog. 211, 302; Health 460; Physics 177; PolSci. 360, 361, 364, 368; Psych. 440; Sociol. 111, 380, 383, 389, 681R.

If the student elects to obtain a minor, it will be unnecessary to complete the 15 credit hours in supportive courses.

Requirements for a Minor for JA Majors

Majors who wish to obtain a minor in lieu of the 15 hours in supportive courses may do so from any other department in the University. The number of credit hours needed and the courses required to complete a minor are determined by the department in which the minor is to be taken. The credit hours used in fulfilling the minor requirements cannot be counted twice with those used in fulfilling the major requirements. As an alternative to these minor requirements, students may select a concurrent major within one of the following departments: Political Science, Psychology, or Sociology. If this alternative is chosen, credit hours used to fulfill-therequirements in the concurrent major may be counted twice with those used to fulfill the requirements for a major in JA. The courses selected to complete the minor requirements or the concurrent major requirements should be chosen in consultation with the adviser and with the chairman of the chosen minor or concurrent major department.

Requirements for a Minor in JA

Bachelor-degree candidates taking a minor in JA are required to complete satisfactorily a minimum of 15 credit hours chosen from the following courses in consultation with their advisers:

Required Course:
  JA 101.
Elective Courses:
  JA 102, 299R, 300R, 301, 302, 303, 304, 305, 306, 307, 326, 333, 399R, 401, 402, 501, 502, 503, 504, 599R; PolSci. 330, 361; Health 430, 460; Sociol. 381, 383.

Paralegal Studies

The Justice Administration major offers a track in paralegal studies designed to prepare students to assist prosecutors, public defenders, judges, private investigators, legislative researchers, and private attorneys with their legal research, physical investigations, interviews, and data collection and evaluation. Students may desire to supplement their studies with selected business, administration, and communication skills and more advanced justice administration training and experience. The program helps to develop legal research abilities that could help students to qualify for summer work in law-related fields.

Students planning to enroll in the Paralegal Studies Program must be aware of the limited local job market for paralegal assistants. Surveys show employment opportunities to be quite high in large metropolitan areas of the United States and Canada.

It should be further noted that the program will require a moderate degree of diligence on the part of the student as the program requirements are quite strict and at times demanding.

To receive a bachelor's degree in the justice administration paralegal studies track, the student must fulfill all of the general education courses required by the University in addition to the following:

Required Courses (45 hours)

The following courses must be taken: JA 101, 301, 302, 304, 306, 326, 333, 399R; Acctg. 242; CDFR 461; PolSci. 300, 311, 330.

Students must satisfactorily complete two of the following: JA 307; Econ. 110; PolSci. 360, 361, 364, 368, 373.

Recommended supportive courses: Acctg. 201, 202, 321; Hist. 121; Stat. 221.

Suggestions for course sequence are available in the Justice Administration office.

Cooperative Education

In the freshman or sophomore year, majors whose primary interests are in law enforcement are encouraged to enroll in JA 299R, a lower-division practicum course which will afford students an opportunity to intern with the BYU Security Police Department.

In the junior or senior year, majors are encouraged to enroll in JA 399R, an upper-division practicum course; and for those majors who have completed the required justice administration courses for a bachelor's degree, there is JA 599R, an advanced justice administration practicum for which upper-division or graduate credit may be obtained. Students will serve as interns with various agencies of the justice system. One of the intern programs involves working in staff positions with the Los Angeles County Sheriff's Department.

Graduate Program

Program. Master of Public Administration (MPA).

The master's degree program is administered by the Institute of Government Service in cooperation with the Graduate School of Management. The title of the degree is Master of Public Administretion (MPA), and it includes justice administration as an area of specialization. For further details and requirements see the *Graduate School of Mangement Bulletin.*

Courses

101. Introduction to Law Enforcement. (3:3:0) Home Study also.

Philosophical and historical background, agencies of criminal justice, and evaluation of law enforcement today.

102. Patrol Administration. (3:3:0) Home Study also. Prerequisite: JA 101.

Patrol methods, planning and supervision, and basic police procedures.

200R. Justice Administration Practicum. (Arr.) Prerequisite: JA 101.

Introductory study and field experience through observation and participation in law enforcement and justice administration.

299R. Justice Administration: Cooperative Education. (1-3:Arr.:Arr.) Prerequisite: freshman or sophomore status

On-the-job experience with BYU Security/Police.

300R. Special Issues of Justice Administration. (3:3:0 ea.) Home Study also. Prerequisite: JA 101.

Topics include crime prevention, community relations, special police tactics, changing role of police, and organized crime.

301. Criminal Evidence. (3:3:0) Home Study also. Prerequisite: JA 101.

Evidence and proof: kinds, degrees, admissibility, competency, and weight; laws and rules of evidence.

302. Criminal Investigation. (3:3:0) Home Study also. Prerequisite: JA 101.

Investigative theory, objectives, and procedures; specific techniques for selected offenses; special problems in investigation.

303. Introduction to Industrial and Retail Security. (3:0:0) Home Study also. Prerequisite: JA 101.
Administering protection in business and government.

304. Criminal Justice Procedure. (3:3:0) Home Study also. Prerequisites: JA 101, PolSci. 300.
Adversary system of criminal justice: tracing a criminal case through the pretrial, trial, and posttrial process and beyond.

305. Administration of Juvenile Justice. (3:3:0) Prerequisites: JA 101, PolSci. 300, Sociol. 383.
Organization, functions, and jurisdiction of juvenile agencies; the processes from initial contact with police to selection of dispositional alternative, juvenile law and court procedures.

306. Criminalistics. (3:2:1) Prerequisites: JA 101, 302, and PolSci. 300; recommended: Chem. 100, Physics 100.
Techniques of scientific criminal detection, emphasizing value of special scientific aids to investigators; practice collecting physical evidence.

307. Criminal Law. (3:3:0) Prerequisites: JA 101 and PolSci. 300.
Nature, sources, and types of criminal law; classification and analysis by the law enforcement officer of crimes in general and of specific offenses.

326. Civil Justice Procedures. (3:3:0) Prerequisite: JA 101.
Role of the attorney assistant in civil matters, commercial domestic relations, personal injury procedures, and general case preparation.

333. Principles of Legal Research. (3:2:1) Prerequisite: JA 101.
Techniques of legal research and technology; preparation of legal briefs, opinions, and statements of law.

399R. Justice Administration: Cooperative Education. (1-9:0:0 ea.) Prerequisite: junior or senior status.
On-the-job experience throughout the world.

401. Correctional Processes. (3:3:0) Prerequisites: JA 101 and PolSci. 300.
History, philosophy, and methods, including probation, correctional institutions, the treatment approach, parole and other release procedures, and juvenile and private corrections.

402. Traffic Administration and Control. (3:3:0) Prerequisite: JA 101.
Administration and control of vehicular and pedestrian traffic through data collection and analysis, planning, implementation, and evaluation.

500R. Field Study in Justice Administration. (1-9:Arr.:Arr.) Home Study also. Prerequisites: JA 101, 102, 301, 302, 304, PolSci. 300; and consent of instructor.
Observation and participation in the processes of law enforcement and justice administration.

501. Special Problems in Criminal Law. (3:2:0) Prerequisites: JA 101, 301, and PolSci. 300; recommended: PolSci. 361.
Problems confronting law enforcement officers relating to the controls imposed by the current status of constitutional doctrine.

502. Law Enforcement Organization and Administration. (3:2:0) Prerequisites: JA 101, 301; PolSci. 300, 330.
Organization and management of line and staff operation; professionalization, ethics, and press and public relations.

503. Program Development, Research, and Evaluation: Justice Administration. (3:1:2) Prerequisites: JA 101 and 304.
Analyzing needs for improvement in agencies; data collection and analysis, establishing priorities and criteria, preparing budgets, and grant proposals.

504. Economic Crime Investigation. (3:3:0) Prerequisites: JA 101, 302; recommended: JA 304, Acctg. 201.
Techniques and methods of investigating "white collar crime" and other offenses within organizations; scope of economic crime and methods of prevention, detection, and control.

599R. Justice Administration: Cooperative Education. (1-9:0:0 ea.) Prerequisites: JA 101, 102, 301, 302, 304, PolSci. 300, and consent of coordinator.
On-the-job experience throughout the world.

Graduate School of Management

Professors: Andersen, Andrus, Bateman, Brower, Call, Christensen, Daines, Dalton, Davies, Dyer, Garrison, Grow, Harlow, Henderson, Hubbard, Johnson, Knighton, Moffitt, Oaks, Orton, F. Skousen, K. Skousen, J. Smith, Snow, Stanford, Taylor, Waters, Woodfield.

Associate Professors: Albrecht, Barnes, Buckwalter, Cameron, Cherrington, Clarke, Covey, England, Geurts, Giauque, Hansen, Hardy, Kelly, Koller, Lambert, Lee, McAllister, McDonald, McKell, McKinnon, Nelson, Oveson, Parsons, Pritchett, Randall, Ritchie, Schill, Slover, Streuling, Thompson, Timmins, Wistisen.

Assistant Professors: Brackner, Cox, Crawford, Jackson, Kearl, Nadauld, Peterson, Romney, M. Smith, Switzler, White, Williams, Woodworth, Wright.

Instructor: Longmore.

The Graduate School of Management offers degrees in the following graduate professional programs:

Master of Business Administration
Master of Public Administration
Master of Accountancy
Master of Organizational Behavior

Information regarding these programs, admission standards, and related matters may be obtained from the *Graduate School of Management Bulletin*, which is available through the office of the Dean of the Graduate School of Management, 154 JKB, Brigham Young University, Provo, Utah 84602.

To be admitted to the Graduate School of Management, the applicant must meet the high academic and admission standards established by each of the programs. In addition, an applicant must meet the general requirements for admission to the University, including the personal standards required of all students.

Applicants for admission must be made on forms provided by the Graduate School of Management. A flexible admission policy is used, and qualified applicants will be accepted as long as places are available.

Courses for Master of Business Administration

Required Courses

500. Corporate Financial Reporting. (3 credits)
A study of published corporate financial statements to aid in analysis of a wide variety of financial reporting issues.

501. Managerial Accounting I. (3 credits)
A study of the nature, objectives, and procedures of cost accounting. Topics include job costing, joint product costing, cost behavior analysis, standard costs, problems of cost allocation, and uses of cost data in management decision making.

510. Managerial Economics. (2 credits)
Application of specific microeconomic concepts to business operation. Structure and behavior in both factor and product are examined. Techniques of empirical analysis basic to the decision-making process are utilized.

511. Macroeconomics and Business Environment. (2 credits)
The macro-structure and operation of the economy; analyzing fluctuations in national income, employment and prices; the influence of monetary and fiscal policies; and the impact of these factors on business operations.

512. Government and Business. (2½ credits)
The examination of the impacts and interrelationships of government on business within an economic framework.

520. Business Finance I. (2½ credits)
A study of the short-term financing of a business operation. Development of techniques for financial planning, such as analysis of ratios, profitability, and liquidity.

521. Business Finance II. (2½ credits)
A continuation of Business Finance I. Examination of long-term financing and an analytical approach to such concepts as capital budgeting, valuation, reorganization, and dividend policy.

530. Mathematics for Business Analysis. (2 credits)
Review of linear algebra, sets, functions, and relations and an introduction to concepts of differential and integral calculus. This course is offered prior to the first semester for those without adequate background in calculus.

531. Quantitative Analysis. (3 credits)
Introduction to simple and multiple correlation and regression and analysis of variance techniques. Focus is on business decision making under conditions of uncertainty primarily through the use of Bayesian Statistics.

532. Computers and Management. (2 credits)
An examination of the use of computers, techniques of systems designs, and management problems concerned with the mechanization of data processing. A computer language is taught to help students understand the computer and how it can help solve business-related problems.

533. Operations Management. (3 credits)
An examination of analytical methods for the management of business operations; techniques for design, operation, and control of operating systems.

540. Organizational Behavior. (3 credits)
Analysis of individual, group, and organization variables which inhibit or facilitate effective organizational functioning. Topics include motivation, rewards, leadership, conflict, decision making, structure, evaluation, and change.

541. Management and Organization Development. (3 credits)
Analysis of organization structure and design, organizational motivation and control, and the management of change in organizations.

550. Marketing Management. (3 credits)
Development of analytical marketing tools and techniques, and their utilization in case analysis and decision making in marketing management.

561. Written and Oral Communication I. (1 credit)
Examination of most frequent communication deficiencies, learning of accepted business report writing techniques, and development of skills that contribute to effectiveness in preparing business reports.

562. Written and Oral Communication II. (1 credit)
A continuation of Written and Oral Communication I.

563. Management Simulation. (1 credit)
Integration of the functional areas of business and organizational behavior through use of a management simulation game.

680. Business Policy. (3 credits)
A top-management approach to the problems of determining corporate strategy.

682. Business, Society, and the Individual. (3 credits)
An analysis of the forces operating on business firms and those created by business firms such as individual ethics, labor relations, urban affairs, race and sex discrimination, and government relations.

Electives

601. Managerial Accounting II. (3 credits)
A continuation of Managerial Accounting I, with particular emphasis on process costing systems and on current costing issues, problems, and applications. The course requires completion of an approved project.

602. Federal Income Taxation. (3 credits)
To heighten awareness of tax considerations on business decisions. Business transactions are analyzed for their tax factors. A study is made on the basic structure of the law and the implications of both personal and corporate income tax.

603. Corporate Accountability I. (3 credits)
An examination of principles underlying the recording and reporting of accounting data. Topics include valuation and its relation to income determination; basic structure of financial accounting systems; and content, analysis, and interpretation of financial statements.

604. Corporate Accountability II. (3 credits)
A continuation of the topics in Corporate Accountability I.

605. Auditing and Corporate Control. (3 credits)
Broad review of audit procedures to show their application to various types of audit engagements and reports.

606. Seminar in Current Accounting Problems. (3 credits)
A study of current accounting thought and issues. The course content and format will vary from year to year in accordance with interests of the instructor and students.

610. Industry Structure and Pricing. (3 credits)
A detailed analysis of a selected firm or industry, involving estimation of demand and cost curves for that firm or industry.

611. Seminar in Industry Structure and Pricing. (3 credits)
Continuation of analysis begun in MBA 610. This course involves the preparation of a major paper analyzing pricing policies of a particular firm or industry in light of demand and cost analysis. Prerequisite: MBA 610.

613. Business and Economic Forecasting. (3 credits)
Examination of large scale macro forecasting models and their application to forecasting trends for individual business firms. Course also includes analysis of regional macro-models.

615. Seminar: Issues in Managerial Economics. (3 credits)
A review of current issues in managerial economics.

620. Advanced Corporate Finance. (3 credits)
A selection of important problems surrounding the issues of financial strategy and tactics confronting top financial and general managers.

621. Quantitative Financial Analysis. (3 credits)
An examination of the methodology and the development of theories of finance. Special emphasis is given to the application of quantitative methods in the solution of financial problems.

622. Investments. (3 credits)
A comprehensive study of the basic principles and techniques of investment analysis and portfolio selection and management. Portfolio policies available to investors are critically appraised.

623. Investment Analysis and Portfolio Theory. (3 credits)
An application of quantitative techniques to the portfolio selection process and the analysis of securities. A review of the existing literature on portfolio selection, revision, and measurement and evaluation is included.

624. The Capital Markets: Structure and Analysis. (3 credits)
An examination of the organizations and functions of the capital markets: relationships to the money markets, historical background, structures, and analysis of significant economic problems and trends in the markets.

625. Management of Financial Institutions. (3 credits)
Examination of problems and policies of financial institutions. Topical areas include competition for funds, asset liability management, capital management, strategic diversification, and shaping of competitive strategy.

626. Seminar in Finance. (3 credits)
A consideration of current topics of financial interest. Specific content of course is largely a function of the interests of the instructor and the participants in the class. Research topics in the area of financial institutions, Investments, and corporate finance will be considered.

627. International Finance. (3 credits)
Presentation of the basic institutional framework for consideration of issues in international finance. From the perspective of the firm, the course evaluates short- and long-term financial decisions; hedging, speculation, and arbitrage; dumping; and price discrimination.

630. Advanced Quantitative Methods. (3 credits)
Topics covered include linear programming, duality/sensitivity analysis, integer programming, stochastic programming, dynamic programming, and markoff processes and their application to business problems.

631. Advanced Data Analysis. (3 credits)
Use of standard methods of statis-tical estimation and inference in analyzing empirical and experimental data. Topics considered include introduction to experimental design, analysis of variance and covariance, multiple covariance, and factor analysis.

632. Systems Simulation. (3 credits)
An examination of the formulation, construction, and application of quantitative models for business planning and decision making. Particular attention is given to the use of simulation models.

633. Mathematical Modeling. (3 credits)
An examination of the logic, application and interpretation of decision models. The intent is to provide an understanding of the logic, methods and techniques of various operations research models that will allow cooperation with specialists in the quantitative disciplines.

634. Advanced Operations Management. (3 credits)
Cases, readings, research, and reports on current industrial practices and problems.

635. Systems Analysis and Design. (3 credits)
Application of business sytems analysis and design to situations ranging from small intra-company functional units to large company-industry interactions.

640. Dynamics of Interpersonal Behavior. (3 credits)
Designed to increase understanding of interpersonal and small group behavior. Students learn how to function in small groups and how to relate to others as a result of the feedback and reaction of other class members.

641. Leadership in Organizations. (3 credits)
An examination of problems in the application of scientific knowledge for the development of effective leaders; comparative analysis of research, theories, and practices of different approaches to leadership training.

642. Career Development. (3 credits)
Development of skills in career management Students learn the process of personal assessment by analyzing data on their own histories, interests, skills, values. They also explore early career possibilities and consider alternative plans for action.

643. Management Philosophy and Style. (3 credits)
An experience-based class to help students look at their potential management style and to develop a philosophy of management.

644. Advanced Personnel Administration. (3 credits)
An examination of personnel functions from a theoretical, applied, and research orientation: recruitment, selection, interviewing, test validation, performance appraisal, equal employment opportunity, wage and salary administration, and morale measurement.

645. Motivation and Control. (3 credits)
A review of the major approaches to the study of motivation and to exploring the application of these concepts to problems of managing complex organizations.

646. Organization Theory. (3 credits)
A review of concepts and research findings from psychology, social psychology, sociology, cultural anthropology, and systems theory which are useful in understanding behavioral forces operating in complex organizations, and their implications for organizational development.

647. Advanced Seminar in Organizational Behavior. (3 credits)
A study of special topics or problems varying from semester to semester. Examples: (1) conflict resolution, (2) power and influence, (3) intergroup relations, (4) career development and planning.

648. The Dynamics of Organization Change: Interventions and Strategies. (3 credits)
An examination of the forces operating to induce or resist change in organizations and the strategy and tactics of organization change. Students will be exposed to the current methods of producing organization change.

650. Marketing Research and Information Systems. (3 credits)
An examination of the design and use of marketing information systems, with special emphasis on experimental and survey research techniques used in marketing. A major research project is required.

651. Buyer Behavior and Marketing Decisions. (3 credits)
An exploration of the application of behavioral science concepts and consumer research methods and findings to marketing problems. Special focus is on the analysis of the behavioral dimensions of markets and market segments as they influence marketing decisions.

652. Quantitative Methods and Market Analysis. (3 credits)
Application of quantitative methods in marketing analysis including various forecasting procedures, multidimensional scaling, multiple discriminant analysis, Bayesian decision-making, analysis of variance, regression and correlation, and other techniques.

653. Seminar in Marketing. (3 credits)
An intensive study of various marketing topics: International marketing, social issues in marketing, government regulation of marketing, sales forecasting, institutions and channels, marketing in nonbusiness organizations, and marketing theory.

654. Sales Management. (3 credits)
An examination of the nature of personal selling; sales organization, planning, and control; recruiting, electing, training, compensating, and supervising outside salesmen—with emphasis on special problems of sales personnel.

655. Retailing Management. (3 credits)
A study of the aspects of retail store management, including buying, merchandising, inventory management, promotion, fashion, location, and control. The course is intended to be an introduction to retailing management for those planning a career in this field.

656. Industrial Marketing. (3 credits)
An examination of marketing through contracts, negotiation, the management of technology, inter-organizational strategy formulation, and implementation in marketing industrial products and services to organizational markets.

657. Product Management. (3 credits)
A functional examination of the development and

management of consumer products. Attention is given to the selection of products, line planning, brand name selection, packaging, market testing, and government regulations.

660. Management of Resource Acquisitions. (3 credits)
A study of the management process for the acquisition of nonfinancial material resources, including selecting resource markets and vendors, buyer/vendor relations, acquisition strategies, and general procurement management.

683. New Enterprise Management. (3 credits)
A review of the concepts and skills of entrepreneurship, plus student teamwork with an actual developing enterprise.

684. International Business Management. (3 credits)
Problems and policies of multinational corporations operating in different international economic settings. Topics include financing exports in foreign operations, marketing and market research, and management and personnel practices.

685. Business Law. (3 credits)
An introduction to the body of law that governs the behavior of corporate executives in their relations with boards of directors, stockholders, and the general public.

686. Real Estate Management. (3 credits)
An application of the principles and techniques on problems in property investments. Includes determination of value, financing arrangements, and marketing and management problems.

687. Risk Management. (3 credits)
An examination of the importance of risk in personal and business affairs; the different methods of meeting risks; meeting insurable risks through insurance, risk and public policy.

688. Applied Econometrics. (3 credits)
Single equation econometric, line, programming, and report output technique, applied (using computer algorithms) to an industry.

690. Strategic Planning. (3 credits)
An examination of the process of planning management strategies. Attention is given to 1) problem and goal definition, 2) formulation of strategies, 3) evaluation of alternatives.

693. Readings and Conference. (1-3 credits)
Subject to be arranged with the instructor.

Courses for Master of Public Administration

573. Introduction to Public Works Management. (3 credits)
An overview to acquaint public administration majors with real-life engineering, economic, and management problems inherent in public works programs offered in cooperation with the Civil Engineering Department and dually listed as CivEng 573.

600. Fundamentals of Public Administration. (2-3 credits)
A survey of the study and practice of public administration in modern society The subject matter focuses on government organization, administrative reform movements, and introduction to the political-social environments of public administration.

601. Quantitative Analysis. (3 credits)
A review of statistical techniques, stressing application to public administration. Emphasis is placed on measurement, descriptive statistics, probability and significance testing, correlation, regression, analysis of variance, and decision making

602. Organizational Analysis. (3 credits)
Examination of concepts and research findings useful in analyzing complex organizations. Focus is given to formal organizational structure, social-psychological systems, decision making, organizational change and effectiveness, and the organization environment.

603. Public Personnel Administration. (3 credits)
Introduction to organization, processes and procedures, controls and problems of public personnel systems. This course acquaints students with current practices of classification, wage and salary administration, personnel evaluation, labor relations and motivation.

604. Public Finance Administration. (3-4 credits)
Analysis of the organization and management of financial resources in the public sector. Attention is given to organization and responsibility for fiscal control, revenue sources, debt management, intergovernmental financial relationships, and budget preparation and control.

605. Management Information and Control Systems. (3 credits)
Examination of information control systems in public organizations. This course considers basic concepts of financial information utilized in planning and control decisions, designs of accounting systems, and the use of financial reports.

606R. Development Seminar. (2-3 credits)
Required of all majors each semester in residence. Special workshops and seminars are designed for personal growth and development, including report writing, assessment of decision-making skills, interviewing techniques, and office management pro-cedures

607. Public Policy Formulation and Analysis. (3 credits)
Examination of forces and events in the formulation of public policy. Concepts for analysis of public policy are surveyed. Examples of use and abuse of scientific findings are evaluated.

608. Public Issues and the Administrator. (3 credits)
Analysis of contemporary public problems. The political and social environments of selected issues, such as crime, housing, and welfare services, are assessed in relation to administrative discretion.

609R. Practicum in Public Administration. (2-4 credits)
Internship experience. The field experience is intended as a skill application and personal development opportunity. The internship occurs during the summer months between the first and second academic years.

610. Research in Public Administration. (3 credits)
Independent research. Application of analytical and research skills to practical problems in public administration. The student, in cooperation with the research unit, selects the area of study.

611. Management Philosophy and Style. (3 credits)
Analysis of individual behavior in group and organization settings. This experience-based class helps students assess their leadership style and develop a philosophy of management.

612. Administrative Behavior. (3 credits)
Analysis of the behavior of individuals and groups within organizations and the behavior of organizations with respect to their culture and political environment.

614. Program Administration. (3 credits)
An examination of the basic factors underlying the effective administration of specific functional areas of public administration.

615. Legal Environment of Public Administration. (3 credits)
An examination of the impact on the administration of public laws, procedural due process, and the right to know Course work considers current issues in delegation and exercise of discretionary powers, rule making, adjudication of agency-citizen disputes, and privacy and disclosure.

616. Administrative Systems Analysis. (3 credits)
Introduction to systems and organization analysis. This course presents an overview of electronic data sys-

tems, and systems analysis including work units and standards, procedures analysis and management planning.

617. Rational Decision Making. (3 credits)
The application of microeconomics to public policy decision making; to constrained optimization, policy outputs and inputs, techniques of production function and cost equation estimation.

619R. Directed Readings in Public Administration. (1-3 credits) Prerequisite: permission of adviser and instructor prior to registration.
Individualized reading and consultation.

630. Urban Management. (3 credits)
An examination of administrative organization, municipal functions, communications, regulatory procedures and intergovernmental relations. The International City Management Association Certificate is awarded upon successful completion of this course.

631. County Management. (3 credits)
Introduction to organization and management of county government. This course focuses on county modernization studies, consolidation movements, county services, fiscal management, and intergovernmental relations.

632. Intergovernmental Administrative Relations. (3 credits)
An evaluation of the new federalism and its impact on the organization and administration of state and local governments. Special attention to cooperative associations, revenue sharing, grantsmanship, and technical assistance programs.

633. State Government Administration. (2 credits)
An examination of the organization, functions, and operation of state government. Consideration is given to the changing role of state government in the federal system, along with organizational and administrative innovations to meet new and increasing demands.

640. Introduction to Planning. (2 credits)
Introduction to planning principles and processes, policy planning and comprehensive general planning, and what goes into a plan and what planners do. Special attention is given to the organization and politics of the planning process.

641. City Planning. (3 credits)
An examination of the basic problems and techniques in the preparation of planning documents for urban government. Attention is given to environmental impact statements, specific plans and implementation procedures in urban planning. (MPA 640 recommended.)

642. Introduction to Urban Design. (3 credits)
A survey of historical and contemporary environmental urban designs. Various graphic techniques in urban design are analyzed for quality, adaptability and aesthetics.

643. Urban Graphics. (3 credits)
A study of the use of graphic design in planning public and recreational areas. Topics include technical aspects of graphic layout, specifications, and general design problems in multidimensional presentations.

644. Urban Design Lab. (2 credits)
Introduction to planning ground and building complex for public and civic development. Students apply various design principles to selected class assignments from field projects.

645. Housing Administration. (3 credits)
Analysis of housing problems and governmental/private solutions. Students are introduced to housing survey techniques, impact of building and zoning regulations, housing authorities, and evaluation of various housing programs and innovations.

646. Environment Planning and Resource Management. (3 credits)
Examination of complex political and legal processes and institutions in administration of environmental resources. The analysis of water and land resource needs will include criteria of adequacy, appropriate distribution, and utilization.

650R. Seminar in Public Personnel Administration. (3 credits)
An advanced study in public personnel administration with variation of topics to meet current needs, including labor-management relations, salary administration, manpower planning, and management training in the public sector.

655R. Seminar in Public Finance Administration. (3 credits)
Advanced study in public finance and accounting with variation in topics to meet current needs, including budget analysis, program budgeting, performance evaluation, internal auditing, and accounting systems in government.

660. Law Enforcement Administration. (3 credits)
An examination of the organization and management of law enforcement agencies. Particular attention is directed to professionalism, ethics, relationship with the press, and development of police-community relations programs.

661R. Seminar in Judicial Administration. (2-3 credits)
Studies in judicial administration with variation in topics to meet current needs, including social-cultural foundations of criminal law, the law enforcement function, operation and function of courts, and general court management.

665R. Seminar in Health Care Administration and Planning. (2-3 credits)
Studies in health care administration and planning with variation of topics to meet current needs, including hospital organization and management, medical care program administration, health finance, health policy, and health planning.

666. Health Care Finance. (3 credits)
An examination of budget and accounting systems applied to hospitals, including costs, rate setting, revenue sources and reimbursements, capital management, and regulation of hospital expenditures. Attention is given to the administrator's financial role.

667. Hospital Administration. (3 credits)
An examination of the management of health institutions with special emphasis on the general hospital, ownership, organization and culture, control, health services law, and manpower management.

668. Health Care Planning. (3 credits)
An examination of health care planning jurisdictions, planning processes, regulation and government interface, resource allocation and cost benefit effectiveness. Attention is given to regional health care systems.

675. Legislative Management and Behavior. (3 credits)
An examination of managing and staffing the legislature, legislative behavior; and the role of staff in an intense political environment. Class is designed for students interested in legislative staff and support activities—fiscal review, performance auditing, program research, etc.

680R. Seminar in International Administration. (2-3 credits)
An examination of international administration with variation in topics to meet current needs, including comparative administration of technical assistance with emphasis on cultural restraints of program transfer.

Courses for Master of Accountancy

501. Special Problems in Accounting I. (3 credits). Prerequisite IPA 302
A study of partnerships, estates and trusts, and consolidations.

502. Special Problems in Accounting II. (2 credits) Prerequisite IPA 302

An examination of selected advanced accounting topics.

503. Accounting for Nonprofit Organizations. (2 credits) Prerequisite Acctg. 202 or 203

A study of accounting concepts and methods peculiar to governmental units, universities, hospitals, and other nonprofit organizations.

509. Accounting Theory. (3 credits) Prerequisite IPA 302.

A study of the theoretical bases for generally accepted accounting principles and proposed alternatives to these principles.

521. Advanced Taxation. (3 credits) Prerequisite IPA 321.

An examination of tax laws as they apply to selected tax entities with an introduction to tax research methodology.

522. Tax Research Methodology. (4 credits) Prerequisite IPA 321 and 521.

An in-depth treatment of research and procedures emphasizing communication and presentation of findings.

532. Advanced Mathematics of Business. (3 credits) Prerequisite Math. 110R and Acctg. 232.

An examination of selected topics from finite mathematics, vectors, matrices, trigonometry, analytical geometry, and elementary differential and integral calculus as applied to business.

542. Advanced Business Law. (3 credits) Prerequisite Acctg. 242.

A study of business law for accountants and businessmen, with emphasis on laws covered in professional accounting examinations.

551. Application Programming for Business Systems. (3 credits) Prerequisite ComSci. 133 A and B.

A study of computer applications in business using the COBOL programming language, structured programming, data management, sorting, and file maintenance.

552. Information Systems Detailed Design. (3 credits) Prerequisite IPA 356.

An examination of integrated applications focusing on details of each step in the systems design life cycle.

553. Information Systems Analysis. (3 credits)

An introduction to information systems, concepts, underlying theories, disciplines, and tools. Offered Fall Semester only.

565. Auditing Methodology. (3 credits) Prerequisite IPA 365.

A study of auditing methodology including computer software and statistical sampling to perform audits of complex business organizations.

570. Macroeconomics for Business. (3 credits) Prerequisite Econ. 300.

An examination of macroeconomic principles analyzing the economic environment within which business operates and forecasting changes in aggregate economic relationships.

571. Fundamentals of Organizational Behavior. (3 credits)

Analysis of individual group and organization variables that affect organizational functioning. Topics include motivation, rewards, leadership conflict, decision making, structure, evaluation, and change.

572. Marketing Management. (3 credits)

Analysis of problems in marketing management, emphasizing the understanding and use of basic concepts and tools of analysis for marketing decision making.

580. Professional Ethics. (2 credits)

An examination of the concepts of professional ethics, rules of conduct, and practical problems and cases bearing on moral, economic, and social issues.

586. Contemporary Professional Accounting Problems. (3 credits) Prerequisite IPA 302, 321, 365, 401.

A study in accounting problems with emphasis on problems encountered in professional examinations.

587. Contemporary Management Accounting Problems. (3 credits)

A study in management accounting with emphasis upon problems encountered in the CMA professional examination.

599R. Accounting Internship. (3 credits)

Practical, on-the-job experience and training in industry, government, or public accounting firms.

609. Theory of Accounts and Statements. (3 credits)

A study of the history and development of accounting and financial statements—their meaning and interpretation. Class work includes an analysis of the problems in current accounting theory.

612. Managerial Cost Accounting. (3 credits)

A study of specialized areas in cost determination and cost allocation.

613. Seminar in Resource Allocation and Control. (3 credits)

615. Income Tax Considerations of Managerial Decisions. (3 credits)

An examination of the effect of the federal income tax on business decisions.

621. Corporate Taxation I. (3 credits) Prerequisite IPA 522.

A study of the federal income taxation of corporations and shareholders.

622. Corporate Taxation II. (3 credits) Prerequisite IPA 522.

A continuation of Corporate Taxation I; includes consolidated returns.

623. Taxation of Partnerships. (3 credits) Prerequisite IPA 522.

An examination of federal income taxation of general and limited partnerships and partners.

624. Taxation of Estates, Gifts, and Fiduciaries. (3 credits) Prerequisite IPA 522.

An examination of federal taxation of property transferred by death and gift, and the federal taxation of income of trusts and estates.

625R. Current Tax Policy. (1-3 credits)

An intensive study of special and current tax topics and policies.

626. Taxation of Deferred Compensation and Fringe Benefits. (3 credits) Prerequisite IPA 522.

An examination of federal legislation and regulations treating pensions, profit-sharing plans, and other types of deferred compensation; fringe benefit problems.

627. Taxation of Exempt Organizations. (3 credits) Prerequisite IPA 522.

An examination of federal legislation and regulations pertaining to tax exempt organizations, private foundations, public charities, and other groups; unrelated income.

628. Taxation of Foreign Income. (3 credits) Prerequisite IPA 522.

An examination of federal taxation of foreign transactions.

629. Tax Planning for Families and Organizations. (3 credits) Prerequisite IPA 522 and 624.

A study of relationships among income, gift, and estate taxes and their impact on trusts, corporations, partnerships, or other associations.

632. Quantitative Analysis in Business. (3 credits) Prerequisite IPA 532.

A study of the application of quantitative analysis to administrative problems.

655. Management of Information Systems. (3 credits) Prerequisite IPA 552 or 553.

A study of management problems common in complex information systems.

656. Seminar in Advanced Systems Analysis and Design. (3 credits)
An examination of on-line real-time systems, database management systems, economics of information, and unique features of various application systems. Offered Winter Semester only.

657. Techniques for Analysis of Unstructured Systems. (3 credits) Prerequisite IPA 552 or 553.
An examination of system goals and objectives, systems evaluation, modeling process, problems of large-scale systems, and structured modeling.

658. Seminar on Management Advisory Services. (3 credits)
Preparation of proposals; conducting an engagement; guidelines for MAS; visiting lecturers from public and private practice.

665. Auditing Seminar. (3 credits)
A study of auditing concepts and philosophy and their application to current and emerging audit areas.

670. Theory of Money and Banking. (3 credits)
Theory of money and banking.

671. The Capital Markets Structure and Analysis. (3 credits)
A study of the organization and functions of the capital markets, relationships to the money markets, historical background, structures, and analysis of significant economic problems and trends in the markets.

673. Developing Personal Management Style. (3 credits)
A laboratory experience designed to help the potential manager develop a philosophy of management and improve personal management style.

674. Seminar in Corporate Finance. (3 credits) Prerequisite BM 301
Topics in financial management. Study emphasizes recent financial theory and practice and use of computers and quantitative models in financial management.

675. Business Policy I. (3 credits)
Top-management approach to the problems of determining corporate strategy.

676. Theory of Public Finance. (3 credits)
Theory of public finance.

677. Business, Society, and the Individual. (3 credits)
An analysis of the role of the business organization with respect to 1) its larger environment and 2) the individual in society.

681. Regulatory Agencies. (2 credits)
An introduction to the SEC and other regulatory agencies impacting on the accounting profession.

687R. Seminar in Accounting and Reporting Problems. (1-3 credits)
An in-depth study into current accounting and reporting problems and their solutions.

691R. Research Seminar. (2 credits)
An IPA course which covers research methodology and the writing of a research report in proper form.

693R. Reading and Conference. (3 credits)
Subject to be arranged with instructor.

Courses for Master of Organizational Behavior

523. Leadership in Organizations: Case Histories and Practicum. (3 credits)
A study of live leadership problems from students experiences, solved with the use of skills, leadership theory, and discipline.

610. Management Philosophy and Style. (3 credits)
An examination of students' potential management style and development of a philosophy of management

625. Advanced Personnel Administration. (3 credits) Prerequisite: one course in statistics and/or research methodology.
An examination of personnel functions from a theoretical, applied, and research orientation: recruitment, selection, interviewing, test validation, performance appraisal, equal opportunity, wage and salary administration, and morale measurement.

630. Dynamics of Interpersonal Behavior. (3 credits)
An application of skills in problem diagnosis, empathy, and communications in group and interpersonal settings.

640. Organizational Theory. (3 credits)
A review of concepts and research findings from psychology, social psychology, sociology, cultural anthropology, and systems theory which are useful in the understanding of behavioral forces operating in complex organizations and their implications for organizational development

642. Career Development. (3 credits)
Designed to assist students in the development of career management skills. Students learn the process of personal assessment by analyzing data on their own histories, interests, skills, values. They also explore early career possibilities and consider alternative plans for action.

645. Motivation and Control. (3 credits)
Designed to acquaint students with the major approaches to the study of motivation and to explore the application of these concepts to problems of managing complex organizations.

650. Research Methods or Organizational Diagnosis and Evaluation. (3 credits)
A study of the adaptations of behavioral science research methods to the special problems of organizational development, especially as they apply to evaluation and action research strategies.

660R. Advanced Seminar in Organizational Behavior. (2 credits)
A study of special topics or problems varying from semester to semester. Examples of such seminar topics are: 1) conflict resolution, 2) power and influence, 3) intergroup relations, and 4) career development and planning

669. Readings in Organizational Behavior. (1-3 credits)
A reading and discussion course with direction from a faculty member in areas of the student's interest

670. The Dynamics of Organization Change: Interventions and Strategies. (3 credits)
An examination of the forces operating to induce or resist change in organizations, the strategy and tactics of organization change. Students are exposed to the current methods of producing organization change.

672. The Consultative Process. (3 credits)
An examination of the third-party role in group development, educational processes, conflict resolution, and organizational interventions and strategies. Class work also includes an evaluation of the ethical and skill requirements of the consultative role.

675. Theory and Method of Laboratory Training. (3 credits)
An application of research findings from studies of behavior skills appropriate to organizational needs.

679. Practicum in Organizational Development. (6-9 credits)
A student is expected to spend one semester or the equivalent time on an organizational development project under the supervision of a faculty member and a recognized professional person in the organization.

680. Organization Behavior Research Report. (3 credits)
This course consists of special research projects in organizations

689R. Continuous Professional Development Seminar. (2 credits)
Each student in the master's program enrolls in this course each semester during residency. The course is designed to be an integrating and synthesizing experience for each student.

Health Sciences

Professors: Hafen, Heiner, Shaw, Thygerson, Watters (Chairman, 213 RB).
Associate Professors: Burgener, Hurley, Rhodes, Robison, Rollins, Tuckett.
Assistant Professors: Hirschi, James, Karren, Petersen, Salazar.
Instructor: Coon.

Undergraduate Program

The Department of Health Sciences offers the student body a quality health-education service program designed to develop attitudes and practices that contribute to quality living and perpetuate wholesomeness among Church members and the public in general.

Associate Degree in Public Health

The Department of Health Sciences has the administrative responsibility for this interdisciplinary two-year degree in public health. The degree is earned upon completion of the general education requirements and 32 hours of public health curriculum selected in consultation with an adviser.

The public health curriculum consists of both core-area and speciality-area classes. The core classes include at least 18 hours from Health 451, 551, and any of the following: Health 121, 325, 460, 501R, 503R; Anthro. 320; OrgB. 321; Sociol. 112, 329, 357; Geog. 301; Zool. 261; and IndianEd. 107. The specialty area classes include at least 12 hours from one of the following areas:

Alcohol—Health 260, 465; CDFR 210; SocWk. 360, 362, 364

Mental Health—Health 260, 465, 503R; SocWk. 360; Sociol. 389; Psych. 111, 240, 440.

Nutrition—FSN 110, 115, 235, 310, 340, 400; FRM 240; AnSci. 121; AgHrt. 151.

Sanitation—Micro. 311, 361, 381, 411; Physics 137; Bot.-Zool. 250; Sociol. 330.

Indian Program

The associate degree in public health listed above is designed especially for the needs of Indian students and their reservation communities; however, the same degree is available for other students. It will emphasize fieldwork and other off-campus experiences.

Health Sciences Teaching Major. Required courses: Health 325, 370, 381, 421, 430, 451, 460; also the following courses or their equivalents from other departments: FSN 115, Zool. 260 and 261, Psych. 321; and at least 6 credit hours from the following courses: Health 465, 501R or 503R, 552, 561, 660; Sociol.-CDFR 361. The student's program is to be established through consultation with an assigned adviser from the Department of Health Sciences.

Health Sciences Minor. Required courses: Health 370, 381*, 421, and 460, and FSN 115. Nine hours selected from the following courses: Health 325, 430, 451, 465, 501R or 503R, 561; Micro. 311; Psych. 321.

*If Health 381 is required in the student's major program, the health science minor will be 17 hours.

Driver and Safety Education Minor. A student may minor in driver and safety education and qualify for state certification by completing the following required courses: Health 121 or 430, 325, 444, 445, 446; and 4 credit hours selected from the following courses: Health 460, 502R, 525; Psych 321; InSci. 455R. The driver education program is established by the State of Utah Certification Office and cannot be altered or have other courses substituted unless the course agrees with a reciprocal list from other state universities. **Health Education major courses cannot be used in both a driver education minor and a health education major.**

Health Sciences: Community Health Education Emphasis.

Those students who intend to pursue public health courses and obtain higher degrees from an accredited and approved school of public health or who intend to specialize in allied health fields should contact the Health Sciences Department for consultation and advisement.

Required courses: Health 325, 370, 421, 430, 431, 451, 460, 465, 551, 561; Zool 261; Micro. 411; OrgB. 358; Sociol. 205; FSN 115; Comms. 211, 335; InSci. 455R; and 9 hours selected from the following courses: Psych. 365; Sociol. 329, 370, or 430; SocWk. 360, 362; PolSci. 311, 330.

Environmental Health Science. Students who pursue a degree in health sciences with an environmental health emphasis will be prepared to obtain employment with public health or private agencies in the fields of environmental protection (i.e., general sanitation, air pollution, water pollution, occupational health, etc.) or to pursue an advanced degree from an accredited or approved school of public health. The student program is to be established through consultation with an assigned adviser in the Health Sciences Department.

Required courses: Chem. 102-103 or 105-106; Physics 137; Health 325, 425, 451, 551, 561; Zool. 261, 317; Micro. 311, 321, 322, 361, 381, 411; Comms. 311; Bot-Zool. 250.

Suggested Course Sequences*

*The courses listed in the suggested course sequences are in addition to the general education requirements.

Two-Year Associate Degree Sequence

Alcohol (64)

First Year	**F**	**W**
Health 460		2
Health 121, 325	2	2
SocWk. 360	3	

Second Year	**F**	**W**	**S**
Health 465, 260	2	2	
Health 451, 551		2	6
SocWk. 362, 364	3	3	
OrgB. 321	3		
Geog. 301	2		
Micro		3	

Mental Health (65)

First Year	**F**	**W**
Health 460		2
Health 121, 325	2	2

Second Year	**F**	**W**	**S**
Health 465, 260	2	2	
Health 451, 551		2	6
Psych. 240	2		
SocWk. 360	3		
Sociol. 389		3	
OrgB. 321		3	
	3		
Geog. 301	2		

Nutrition (64)

First Year	**F**	**W**
Chem. 102		5
FSN 110, 115	2	2

Second Year	**F**	**W**	**S**
Health 460		2	
Health 451, 551		2	6
Geog. 301	2		
Zool. 261	4		
FSN 400, 340	2	2	
FSN 310		2	
FRM 240		2	

Sanitation (64)

First Year	**F**	**W**
Health 325	2	
Micro. 121		3
Micro. 311		2
Chem. 102		5

Second Year	**F**	**W**	**S**
Health 121		2	
Health 451, 551		2	6
Zool. 261	4		
Bot.-Zool. 250	3		
Geog. 301	2		
Physics 137	3		
Micro. 381		2	
Micro. 411		2	

Suggested Four-Year Course Sequence: Teaching Major

First Year

General education courses and preparation.

Second Year	**F**	**W**
Zool. 260, 261		6
Health 325	2	
FSN 115		2
Minor	2	4
SecEd. 276		4
SecEd. 376R		½–2

Third Year	**F**	**W**
Psych. 321		3
Health 370, 552		4
Health 421, 381, 451, 460	9	
Micro. 311		2
Minor	2	4

Fourth Year	**F**	**W**
Health 476	8	
Health 430, 561		6
Minor	2	

Suggested Three-Year Course Sequence: Teaching Major

First Year	**F**	**W**	**Sp**	**Su**
Health 370				2
FSN 115	2			
Health elective	2			
Health 325	2			
SecEd 276	4			
Minor		2		4

Second Year	**F**	**W**	**Sp**	**Su**
SecEd. 276	4			
Health 430				3
Health 381	3			
Health 451	2			
Health 460, 552	2	2		
Health electives	3	3	2	
Psych. 321			3	
Zool. 260		3		
Zool. 261		4		
Minor		2	4	4

Third Year	**F**	**W**
Health 421, 476	14	2
Minor and electives		8

Suggested Course Sequence: Health Sciences—Community Health Education

First Year

General education courses and preparation.

Second Year	**F**	**W**
FSN 115		2
OrgB 358		3
Zool 261		4
Sociol. 205		3
Comms. 211	3	
Related electives		3

Third Year	**F**	**W**
Comms. 335	3	
Health 325, 421	2	2
Health 370, 451	2	2
Health 460, 465	2	2
Related electives	3	6

Fourth Year	**F**	**W**
InSci. 455	2	
Health 430, 431	4	
Health 561, 551	3	2
Micro. 411		2

Suggested Course Sequence: Environmental Health Science

First Year	**F**	**W**
General education courses and preparation.		

Second Year	**F**	**W**
Chem. 102-103 or 105-106		6
Physics 137	3	
OrgB. 358		3
Health 325	2	
Micro. 311	2	
Bot.-Zool. 250	3	
Zool 261		4
Micro. 321-322	4	

Third Year	**F**	**W**
Comms. 335	3	
Health 451, 425	2	3
Micro. 361		3
Zool. 317		3
Sociol. 205	3	

Fourth Year	**F**	**W**
Health 561, 551	3	2
Micro 381		2
Micro. 411		2
Sociol. 430 or 370 or PolSci. 311	3	

Graduate Program

Programs. Master of Science (M.S.). Master of Health Education (M.H.Ed.).

Entrance Examination Required. None

Application Consideration Dates. Same as Graduate School deadlines

Entry Times. Any regular registration

Master of Science

Prerequisites. Community health an undergraduate major or a minimum of 20 hours in community health courses

Health education: an undergraduate major or minor (minimum, 20 hours or equivalent) in health sciences.

Fields. Community health, health education (with emphasis in school health).

Minors Permissible. Option 1 or 2.

Requirements. Minimum of 24 semester hours plus thesis (6-hr. min.); oral and written comprehensive course work examinations.

Required Courses. Community health: Health 692, 551, 670; Stat. 552.
Health education: Health 692, Stat. 552.
Safety education: Health 525, 692; Stat. 552.

Master of Health Education

Prerequisites. Community health: an undergraduate major or a minimum of 20 hours in community health courses.
Health education: an undergraduate major or minor (minimum, 20 hours or equivalent) in health sciences.

Fields. Community health, health education (with emphasis in school health).

Minors Permissible. Option 1 or 2.

Requirements. Minimum of 36 semester hours; oral and written comprehensive course work examinations.

Required Courses. Community health: Health 692, 551, 670; Stat. 552.
Health education: Health 551, 671, 692, 694; Stat. 552.

Courses

10. Beginning Driver Education. (0:2:2)
Qualifies the student for Utah driver's license. No driving experience necessary. Fee required.

121. First Aid and Safety Instruction. (2:2:0) Home Study also.
Emergency procedures for illness and traumatic injuries.

129. Personal Health. (1:0:0)
Accelerated G.E. preparatory course to help students meet the G.E. health competence requirement. Taught on block.

130. Personal Health. (2:2:0) Home Study also.
Developing desirable health behavior. Recommended for all students who require thorough instruction to pass the University health competency exam.

260. Techniques of Alcoholism Rehabilitation. (2:2:0)
Alcoholism treatment to successfully rehabilitate alcoholics.

325. Safety Education. (2:2:0) Home Study also.
General course emphasizing principles and instruction of accident loss reduction.

361. School Health for Elementary Teachers. (3:3:0) Home Study also.
Personal health of the elementary teacher, emphasizing his or her role as a health educator, and an appraisal of health problems of the elementary student.

362. School Health for Secondary Teachers. (½-2:½-2:0) Home Study also.
Certification course. Fundamental principles; adolescent health problems.

370. Consumer Health. (2:2:0) Home Study also.
Analysis of current issues, selecting products and services, and sources of protection.

381. Secondary Health Education Curriculum. (3:3:0)
Emphasizes courses of study in health, with special program planning and health course content review.

421. Health Science Teaching Methods. (2:2:0) Prerequisite: Health 381.
Teacher and student activities required for conceptual learning methods in health science.

425. Occupational and Industrial Health. (3:2:1)
Causal relationships of the work environment to disease and safety of employees.

430. Advanced First Aid. (3:2:2)
Qualifies students for the advanced ARC First Aid card. Covers medical and first aid emergencies.

431. First Aid Instructorship. (1:1:1) Prerequisite: current Red Cross First Aid certificate or Health 430.
Special skills to qualify for American Red Cross instructor rating.

444. Organization and Administration of Driver and Traffic Safety Education. (2:2:0) Home Study also.
Organization, administration, and supervision of high school driver education programs.

445. Driver and Traffic Safety Education. (4:2:4) Prerequisite: Health 444.
Student teaching in the classroom and behind-the-wheel phases of driver education.

446. Driver Simulators and Driving Ranges. (2:2:1)
Simulator and multiple-car driving range methodology, emphasizing operation and maintenance.

451. Community Health. (2:2:0) Home Study also.
Individual school and community involvement in preventing disease, improving human efficiency, and prolonging life.

460. Drug Use and Abuse. (2:2:0) Home Study also.
The physiological, psychological, sociological, and legal implications of drug use and abuse, emphasizing nature, cause, treatment, and prevention.

465. Health and Self-Destructive Behavior. (2:2:0) Home Study also.
Etiological and preventive approach to suicidal behavior. For health educators and other allied personnel.

480. International Health. (2:2:0)
Health values, beliefs, and practices of other cultures, emphasizing how these beliefs and practices affect health and well-being.

501R. Health Education Workshop. (1-3:0:3 ea.)
Selected health education problems, followed by discussions.

502R. Driver and Safety Education Workshop. (1-2:0:2 ea.) Prerequisite: certified driver education instructor or consent of department chairman.
Current safety education problems, research, and methods of instruction.

503R. Health Problems Workshop. (1-3:0:3 ea.)
Current problems in school and community health.

525. Countermeasures for Accident Control. (2:2:2)
Magnitude of the accident problem, epidemiology, role of public agencies, and evaluation of countermeasures.

551R. Fieldwork in Community Health. (Arr.) Prerequisite: consent of instructor.
Understanding community health agencies, their roles, programs, and relationships.

552. School Health, Organization, and Services. (2:2:0)
Desirable school health services, functions, and relationships to public education and educational law. Coordinating school health services with community programs.

561. Health of the Body Systems. (3:3:0) Prerequisite: Zool. 261.
Advanced course in personal health dealing with the major factors in health and disease as they involve the several body systems.

563. Health and the Aging Process. (2:2:1)
Theories of aging—as a normal process, as a pathological process; health promotion, and extension of life. Offered Winter Semester.

650. Preservation of Human Health. (3:3:0) Prerequisite: Health 561 or equivalent.

Epidemiological approach to the cause, nature, extent, and trends in the deterioration of human health.

651. Community Organization for Health. (3:3:0)
Nature of voluntary health organizations, current research in community school organization, and relationship of school health programs to community.

660. Body Responses to Health and Disease. (2:2:0)
Prerequisite: Health 561 or equivalent.
Emphasizing cellular and intercellular responses.

670. Environmental Health. (2:2:0)
Educational practices to improve the environmental approach.

671. Graduate Practicum. (1:1:0)
Role and functions of the college health teacher. Supervised experience in teaching and research.

672. Social Hygiene. (2:2:0)
Prepares prospective teachers to instruct in family life education as it relates to health. Emphasizes sexual maturation, family health problems, parenthood, and other social hygiene factors.

692. Research Methods in Health Science. (3:3:0)

694. Seminar in Readings. (2:2:0)

696R. Independent Studies. (1-3:Arr.:Arr. ea.)

699R. Master's Thesis. (6-9:Arr:Arr. ea.)

History

Professors: Addy, Alexander, Allen, Arrington, Campbell, Hyer, Jagchid, Jensen, Warner (Chairman, 223 KMH).
Associate Professors: Britsch, Cardon, Flammer, Hill, Marlow, Montgomery, Thorp, Tobler, Wood
Assistant Professors: Bloxham, Chandler, Fox, Holmes, Johansson, Pixton, Pratt, Quinn, Seibt, Wright.

Undergraduate Program

The History Department offers preparation for careers in teaching, law, business, government service, advertising, historical editing, and many other areas. A study of history through careful analysis of past civilizations and problems in context provides insights into the problems of today and fosters a greater appreciation of the world about us. History offers a corrective to the tendency to view problems from a simplistic or narrow perspective; for history is, above all, a humanizing and broadening experience, and a discipline that helps us distinguish the important from the transient and discover what really matters in our existence. It is the role of historians, furthermore, to preserve our great cultural heritage and to help interpret it for the improvement of present and future generations.

The History Department provides instruction leading to the B.A., M.A., and Ph.D. degrees.

Requirements for a Major in History

Students may study Asian, European, Latin American, or United States history, but they must not present all of their preparation in a single area. In order to encourage students to broaden their course work, it is required that at least one upper-division course each from the Americas, Asia, and Europe be included in the program.

A history major requires the completion of 32 hours of work in the field. Courses required are Hist. 100 (to be taken first semester as a history major), 110, 111, SocSci. 100, and Hist. 270, taken in the freshman and sophomore years. Majors who seek certification in secondary education are required to take Hist. 466. Hist. 488 is required for those students who intend to pursue graduate study in history; it is recommended for others also, especially for prospective high school teachers. Hist. 490 is required of all majors and should be taken during the senior year. The remaining elective hours should be selected in consultation with a department adviser. Not more than 17 hours of lower-division work in history may be applied toward the major. No D credit will be accepted in upper-division history classes.

Courses chosen to fulfill general education requirements must show consistent, coherent selection, with demonstrable relationship to the student's goals as a history major. See the general education programs section of this catalog for further information.

A minor field is not required for the history major. In its place the student shall select 15 hours of supporting classes from any college in the University.

Students entering the History Department may choose from among the following programs:

Secondary Teaching. Requirements for a teaching major or minor in history and for the composite major in social sciences, which includes history, are found in the Education section of this catalog.

Preparation for Master of Business Administration. Students are advised to gain a basic competence in mathematics during their undergraduate years. Other business courses are not required, but courses in accounting and economics will be helpful (also refer to the *Graduate School of Management Bulletin*).

Preparation for Master of Public Administration. Students should select courses that emphasize contemporary U.S. history and politics. Those who wish to emphasize international administration should also study diplomatic history and the history of specific foreign countries (also refer to the *Graduate School of Management Bulletin*).

Preparation for Law School. Students planning to enter law school are advised to make selections from among courses in economics, political science, philosophy, sociology, psychology, accounting, and expository writing. See the Preprofessional Program—Law section of this catalog for additional information.

Preparation for Library Science. Students should broaden their understanding of the basic disciplines in the humanities, social sciences, and natural sciences. Emphasis should be on those courses that deal more with the structure of a field (such as historiography) than with its substance. In addition, skills such as languages, research methods (including the historical), and computer techniques will be especially useful.

Archival Work. Broad historical background with a strong preparation in methodology (Hist. 490), and archival management (Hist. 390R, Archival Management Option) is required. Recommended are: LIS 500, 513, and 543, and ComSci. 231 or 233.

Historical Editing. Students will need basic preparation in history, with emphasis on research and writing. Hist. 490 should include strong preparation in footnoting and bibliography. Comms. 427 is recommended.

Historical Society or Historical Museum Work. Broad historical background with emphasis in state and local history, as well as Hist. 490 with an emphasis on the use of state or local archival sources, is required. Recommended are. PolSci. 311, 312, and 330; Geog. 302 and 310; AgHrt. 430; ArtDs. 312 or 410; Econ. 110 and 374; and AgEcon. 390.

Requirements for a History Minor

A departmental minor in history consists of 20 hours of work, including Hist. 110, 111, 270, and SocSci. 100, plus 8 hours of upper-division course work.

Graduate Program

Programs. Master of Arts (M.A.), Master of Arts for Teachers of History (M.A.), Doctor of Philosophy (Ph.D.).

Entrance Requirements. A grade-point average of 3.0 over the last 60 hours and satisfactory recommendations are required. In addition, those entering the M.A.

for teachers of history must currently be under a teaching contract. At least two letters of recommendation must be submitted from persons familiar with students' academic qualifications, preferably from professors who have had them as students. Applicants must submit an example of their written work, such as a Hist. 490 paper, and take the verbal portion of the Graduate Record Exam. As of Winter Semester 1976, all students are admitted on a provisional basis. Each student must then be recommended to the department's graduate faculty by a sponsor and receive departmental approval before advancement to full degree-seeking status.

Application Consideration Dates. Same as for Graduate School. Applicants for graduate assistantships for Fall Semester must have applications to department by April 1.

Entry Times. Any regular registration.

Thesis Prospectus. The thesis prospectus for both the M.A. and Ph.D. must be defended at a meeting of the student's committee before it can be approved for submission to the Graduate School. The committee may, at its discretion, ask the student to use a format other than that prescribed by the Graduate School.

Master of Arts

Prerequisites. An undergraduate degree in history or equivalent.

Fields. History of Asia (with Asian Studies), American history, modern European history, Latin American history (with Latin American Studies), ancient history, medieval history, history teaching.

Minors Permissible. Option 1 or 2.

Requirements. Minimum of 24 semester hours plus thesis (6-hr. min.—699R).

Required Course. One seminar in thesis field.

Master of Arts for Teachers of History

Prerequisites. An undergraduate degree in history or equivalent and a current teaching contract.

Requirements. Minimum of 36 hours of credit approved as follows: graduate education, 9 hours; history, 21 hours; professional education project (PEP), 6 hours. Consult committee for specific requirements in each area.

Required Courses. SecEd. 536, 636, 680R, Hist. 500R.

Doctor of Philosophy

Prerequisite. A master's degree in history or the equivalent.

Fields.

Group 1. General Fields

- A. American history
- B. Ancient history
- C. Medieval history
- D. Modern European history
- E. History of Asia
- F. Latin American history

Group 2. Areas of Specialization

- A. American history
    - 1. Colonial history to 1789
    - 2. U.S. national, 1783 to 1877
    - 3. U.S., 1877 to present
    - 4. The frontier and western America
    - 5. History of religion in America
- B. Ancient history
    - 1. Greek history
    - 2. Roman history
- C. Medieval history
    - 1. Early medieval history
    - 2. Later medieval history
- D. Modern European history
    - 1. Renaissance and Reformation
    - 2. Seventeenth and eighteenth centuries
    - 3. Nineteenth and twentieth centuries
- E. History of Asia
    - 1. Ancient Asia
    - 2. Modern Asia
- F. Latin American history
    - 1. Colonial period
    - 2. National period
- G. Religious history (secondary field only)
    - 1. Christian church history
    - 2. Old Testament and ancient Near East
    - 3. New Testament and the Graeco-Roman world
    - 4. Asian religions

Minors Permissible. Any approved minor.

Requirements. One year of study (at least 18 credit hours, including a Ph.D. seminar) must be taken in residence. Competency is expected in the major field, consisting of a general field selected from Group 1 above, plus an area of specialization from within the major field (see Group 2). In addition, the student will select a second field (Group 1) or a second area of specialization (Group 2) other than the major field. These three fields—the major field, the area of specialization within the major field, and the secondary field in history—constitute the history fields. In addition to these, the student will present an approved minor outside history. The written comprehensive covers (1) the general field, (2) the area of specialization within the general field, (3) the secondary field in history, and (4) the minor field. The examinations will be prepared and read by faculty members assigned by the department chairman. On the oral examination the student will be tested on (1) the general field, (2) the area of specialization within the field, and (3) the secondary field in history. There will be no oral examination on the minor field unless the minor department requests it.

Progress Review. To evaluate the suitability of the continuation of their program, Ph.D. students will take an oral examination after the completion of the first academic year of study. Ordinarily, the examination will be given between the completion of 12 to 18 hours of course work, but in every case the examination must be successfully completed before registration for the third semester of graduate work. The examination will be given by a committee of three faculty members selected by the department chairman.

Required Courses. At least one doctoral seminar.

Courses

100. The Study of History. (2:0:0)
Introduction to nature and functions of history, with emphasis on developing skills and resources needed in historical study. History majors and minors only.

110. World Civilization I. (3:3:0) Home Study also. (G-SS)
Beginnings of major world civilizations and their development to approximately A.D. 1500, emphasizing Europe.

111. World Civilization 2. (3:3:0) Home Study also. (G-SS)
Development of major world civilizations since A.D. 1500, emphasizing Europe.

120. The United States to 1865. (3:3:0) Home Study also. (G-SS)
Discovery, colonization, American Revolution, establishment of the Constitution, foreign affairs, westward expansion, sectionalism, and Civil War.

121. The United States since 1865. (3:3:0) Home Study also. (G-SS)
Civil War, Reconstruction, industrialization, urbanization, imperialism, progressivism, world wars, New Deal, and current problems.

171. America and the World: U.S. Roots and Relations. (3:3:0) (G-AH)
Principal contributions of other peoples to America's institutions and development from earliest times to the present. America's influence on the rest of the world.

270. Main Issues in American History. (3:3:0) (G-SS) Prerequisite: Hist. 170 or equivalent.
Discussion based on directed readings of main issues confronting the United States today. Limited to history majors and minors.

300. Ancient Near East. (3:3:0) (G-SS)
Ancient Egypt, Mesopotamia, Palestine, and Persia from ca. 3500 B.C. to A.D. 600.

302. Medieval and Modern Near East. (3:3:0) (G-SS)
Rise and spread of Islam during the period of the Caliphate; Ottoman Empire; Western imperialism; rise of national states.

☐ **American Studies 302. American Society and Culture, 1865-1914.** (3:3:0)

303. Jewish History: 70 A.D. to the Present. (3:3:0) (G-SS)
Jewish diaspora, Jewish life in Moslem and Christian countries; Jewish religious movements; development of Zionism; Jewish communities in modern Israel and the United States. Offered Winter Semester.

304. Greek History and Civilization. (3:3:0) (G-SS)
Hellenic and Hellenistic developments from early beginnings to the Roman conquest.

307. Roman History and Civilization. (3:3:0) (G-SS)
Rise of the Roman Republic, transition to empire, and decline and fall of the Western Roman Empire.

310. The Early Middle Ages. (3:3:0) (G-SS)
Development of medieval history and civilization from the fall of Rome to the Romanesque revival of the tenth and eleventh centuries.

311. The Late Middle Ages. (3:3:0) (G-SS)
Development of medieval history and civilization from the eleventh century to the close of the Middle Ages.

312. The Renaissance: Age of Transition. (3:3:0) (G-SS)
Literary and artistic reawakening of Italy and Europe; commercial revolution, rise of national monarchies.

313. The Reformation: Age of Turmoil. (3:3:0) (G-SS)
Sixteenth-century religious upheaval, with its resulting ideological, cultural, political, and socioeconomic struggles, to mid-seventeenth century.

320. The Age of Enlightenment. (3:3:0) (G-SS)
Developments in Europe from 1650 to the French Revolution, emphasizing political thought, science, and philosophy in the Enlightenment.

322. Nineteenth-Century Europe. (3:3:0) (G-SS)
Political, economic, social, and intellectual history of Europe from 1815 to 1914.

323. Europe in the Twentieth Century. (3:3:0) Home Study also. (G-SS)
International affairs, political and economic history of major European countries (including Russia) from World War I to the present.

329. The Austrian Empire and Eastern Europe. (3:3:0) (G-SS)
Historical development of the countries of East Central Europe (Austria, Hungary, Czechoslovakia, Poland) since 1526.

330. Tsarist Russia. (3:3:0) (G-SS)
From early beginnings to the Russian Revolution.

331. The USSR and Eastern Europe. (3:3:0) Home Study also. (G-SS)
Modern Russia, emphasizing the rise of communism and the development of the USSR.

332. France. (3:3:0) Home Study also. (G-SS)
French history from Roman times to the present, emphasizing the French Revolution, Napoleon, and subsequent developments.

333. Modern Germany. (3:3:0) Home Study also. (G-SS)
Political, military, economic, and cultural development of Germany during the nineteenth and twentieth centuries.

334. Spain. (3:3:0) (G-SS)
Political, social, and economic factors in Spanish history, emphasizing the period since 1492.

335. England. (3:3:0) Home Study also. (G-SS)
English history from Roman era to present, legal and political institutions, Empire-Commonwealth, industrial revolution, recent problems, trends.

337. Scandinavian History. (3:3:0)
Political, social, religious, cultural, economic factors in Denmark, Finland, Iceland, Norway, Sweden from Viking era to present highly developed society.

340. Premodern Asia. (3:3:0) (G-SS)
Beginning of the traditional civilizations of China, India, and Japan, and their development until the coming of the West.

341. Modern Asia. (3:3:0) (G-SS)
Impact of the West on Asian societies, emphasizing change of tradition, imperialism, nationalism, and communism in China, Japan, and India.

342. Korea. (3:3:0) (G-SS)
Political, religious, and cultural development from antiquity to the present.

343. Formative Period of Chinese Civilization. (3:3:0) (G-SS)
Development of China to recent times, emphasizing social and cultural factors.

344. Modern China. (3:3:0) Home Study also. (G-SS)
Developments since the coming of the West, stressing such movements as reform, rebellion, rise of nationalism, and change of traditional institutions.

345. Premodern Japan. (3:3:0) (G-SS)
Development of Japan to 1868, emphasizing social, religious, and cultural aspects.

346. Modern Japan. (3:3:0) (G-SS)
Development following Japan's opening in 1853, emphasizing the process and implications of modernization and expansion.

347. South Asia. (3:3:0) (G-SS)
Modern India, Pakistan, and Bangladesh, including cultural, religious, and political development.

348. Southeast Asia. (3:0:0) (G-SS)
Course emphasizing the modern period, but including ancient influences of India and China.

349. Asiatic Russia. (3:3:0) (G-SS)
Period from 500 B.C. to the twentieth century. Turkish and Mongolian nomadic empires; Russian expansion to the borders of China and Middle East.

351. History of Latin America 1. (3:3:0) (G-SS)
Colonial period, geography, pre-Columbian civilization, conquest, and institutional development from 1492 to 1810.

352. History of Latin America 2. (3:3:0) (G-SS)
National period (1610 to present): independence, institutional development, culture, and inter-American relations.

370. Colonial America. (3:3:0) (G-SS)
Founding, growth, and development of the American colonies to 1763.

372. Founding of the American Republic. (3:3:0) (G-SS)
Causes and consequences of the American Revolution, the Confederation era, and the framing of the Constitution.

☐ **Economics 374. Economic History of the United States.** (3:3:0)

375. The American Republic, 1800-1850. (3:3:0) (G-SS)
Political, social, economic, and diplomatic development and westward expansion during the Jeffersonian and Jacksonian eras.

377. Civil War and Reconstruction. (3:3:0) (G-SS)
The Civil War as the testing of the American political system and as a problem in historical causation.

378. The Emergence of Modern America, from the 1870s to 1920. (3:3:0) (G-SS)
Political, economic, social, cultural, and intellectual aspects of the development of the United States into an urban-industrial world power (excludes Reconstruction).

379. Contemporary United States History. (3:3:0) (G-SS)
Major domestic and foreign problems of the United States since 1920.

380. Popular Culture in America. (3:3:0) (G-AH)
Life and culture in America, emphasizing the American character and its relationship to popular cultural themes.

382. American Social History. (3:3:0) Prerequisites: Hist. 120 and 121 or consent of instructor.
Major methods and issues of American social history, including family history, demography, elites, women, childhood and youth, immigrants, race, religion, urbanization, and social class.

384. Family History. (3:3:0) Prerequisite: Hist. 170, 120, 121, or 382.
Analyzing the family with reference to historical developments and social change through readings and individual projects.

390R. Special Topics in History. (1-3:1-3:0 ea.)
Presented by visiting or regular faculty. Topics include oral history, demographics, psychohistory, etc.

412. Medieval Institutions. (3:3:0) (G-SS)
Structure and life of the medieval church and the main institutions of secular life, such as feudalism and monarchy, the university, and the town.

415. The Expansion of Europe. (3:3:0) (G-SS)
European discovery, exploration, and colonization of Asia and America from the fifteenth through the eighteenth centuries.

424. European Diplomatic History to 1815. (2:2:0) (G-SS)
Development and practice from the Renaissance to the fall of Napoleon.

425. War, Revolution, and Peace in the Modern World. (2:2:0) (G-SS)
Emphasizes relationship between European diplomatic history and domestic history of major world powers, including United States and Russia.

429. European Intellectual History since the Enlightenment. (3:3:0) (G-SS)
Interrelationship of influential ideas and historical events from the end of the eighteenth century to the present.

433. Twentieth-Century Germany: Hitler and Beyond (3:3:0) (G-SS)
Germany's first attempt at democracy during the 1920s, rise and fall of Hitler's Third Reich, and the Bonn Republic.

435. Constitutional Foundations of English History. (3:3:0) (G-SS)
Medieval constitutional developments and analysis within their political, social, and economic framework.

436. Tudor and Stuart England. (3:3:0) (G-SS)
Major political, social, economic, and cultural developments during the sixteenth and seventeenth centuries in England.

437. English Local History. (3:3:0) Prerequisites: Geneal. 320 and Hist. 335, or consent of instructor.
Development of English local historiography; sources available to write the general history of a region, town, village, etc., or of particular aspects of local history.

440. Communist China. (3:3:0) (G-SS)
Chinese Communist development from the 1920s to the present, emphasizing contemporary domestic affairs and foreign relations.

445. History of Asian Religions and Thought. (3:3:0) (G-SS)
Development of Asia's religions and modes of thought and their influence upon Asian and world history.

☐ **Geography 451. Historical Geography of North America.** (3:3:0)

453. Mexico and the Caribbean. (3:3:0) Home Study also. (G-SS)
Social, economic, and political development.

454. Argentina, Brazil, and Chile. (3:3:0) (G-SS)
Social, economic, and political development of these Latin American states since 1820.

455. Northern South America. (3:3:0) (G-SS)
Social, economic, and political developments since 1810 in the five nations of Venezuela, Colombia, Ecuador, Peru, and Bolivia.

456. Brazil. (3:3:0) (G-SS)
From 1500 to present, emphasizing national period.

457. The Indian in Latin American History. (3:3:0) (G-SS)
History of Latin American Indians from preconquest days to the present, emphasizing their achievements, contributions, and problems.

459. Inter-American Relations. (3:0:0) (G-SS)
Relations between the U.S. and Latin American republics since 1810, emphasizing the Pan-American movement and recent period.

460. The Hispanic Southwest. (3:3:3) (G-SS)
Spanish exploration, occupation, and institutions of the American Southwest; Mexican period to 1848.

462. American Westward Movement to 1825. (2:2:0) (G-SS)
Early colonization and westward movement east of the Mississippi.

463. American Westward Movement after 1825. (2:2:0) (G-SS)
Fur trade and colonization in the trans-Mississippi West.

465. California. (2:2:0) Home Study also. (G-SS)
Spanish, Mexican, and American periods in California history, emphasizing developments since the gold rush.

466. Utah. (3:3:0) Home Study also. (G-SS)
Emphasizes territorial period. Not open to freshmen or sophomores.

467. History of the South. (3:3:0) (G-SS)
Political, economic, and cultural history of the Southern States from Colonial times to the present.

468. Mormonism in American History. (3:3:0)
Social, economic, political, intellectual, and religious environment in which Mormonism flourished; contributions of Mormon men and women to American culture and history.

469. The Indian in American History. (2:2:0) (G-SS)
Major developments in the history of leading Indian tribes, including relations with the United States government.

471. U.S. Intellectual History to 1865. (3:3:0) (G-SS)
Life and thought in the United States to the Civil War.

472. U.S. Intellectual History since 1865. (3:3:0) (G-SS)

Life and thought in the United States from the Civil War to the present.

473. History of Religion in the United States. (3:3:0) (G-SS)
Major religious developments in America from colonial times to the present.

474. U.S. Diplomatic History. (3:3:0) (G-SS)
American diplomacy, emphasizing trends and critical decisions of the twentieth century.

475. Military History. (3:3:0) (G-SS)
Broad trends in technology, doctrine, leadership, operations, and military-societal relationships from early times to the present, emphasizing the American experience.

476. American Constitutional History to 1865. (3:3:0) (G-SS)
Development of American constitutionalism: Colonial, Confederation, Convention, judicial review, nationalism vs. sectionalism, and Civil War.

477. American Constitutional History since 1865. (3:3:0) (G-SS)
American constitutional development. Reconstruction, due process, liberal nationalism, New Deal, war and the Constitution, and civil liberties.

488. Historiography. (3:3:0)
Fundamental problems and types of historical analysis and interpretation, philosophies of history, and work of outstanding historians.

490. Historical Research and Writing. (3:3:0)
Sources and methods. Critical analysis of a research project. Required of all senior history majors.

497R. Honors Readings. (1-2:0:Arr. ea.)

498R. Directed Readings. (1-2:0:Arr. ea.) Home Study also.

500R. Special Studies in History. (1-3:1-3:0 ea.) (G-SS)
Directed by visiting or resident faculty. Check with department secretary for current topics and instructor.

570R. Sources and Problems in American History, 1492-1865. (1-2:6:0 ea.) Prerequisites: Hist. 370, 372, 375, and 377, or consent of instructor.
Core course in literature of American history to 1865. Total of 6 hours from 570R and/or 571R required for majors in American history.

571R. Sources and Problems in United States History, 1865-Present. (1-2:6:0 ea.) Prerequisites: Hist. 377, 376, and 379 or consent of instructor.
Core course in the literature of American history since 1865. Total of 6 hours from 570R and/or 571R required for majors in American history.

☐ **Economics 574. American Economic Development.** (3:3:0)

609. Greek and Roman Thought. (3:3:0) Prerequisite: Hist. 304 or 307.
Greek and Roman intellectual, philosophical, and scientific achievements and their relation to Greek and Roman institutions.

613. Medieval Problems and Thought. (3:3:0) Prerequisite: Hist. 310 or 311.
Problems and interpretations in the history of the Middle Ages, from the fall of Rome to the Renaissance.

618. Renaissance Problems and Thought. (3:3:0) Prerequisite: Hist. 312 or consent of instructor.
Source readings, analysis, and interpretation of selected historical problems for the Renaissance.

619. Reformation Problems and Thought. (3:3:0) Prerequisite: Hist. 313.
Source readings and discussions of the great men and ideas of the sixteenth century.

621. Problems in Modern Europe. (3:3:0) Prerequisite: some college-level study of modern Europe.
Readings, analysis, and interpretation of selected historical problems of the nineteenth and twentieth centuries.

625. Problems in European Diplomacy since 1815. (2:2:0) Prerequisite: Hist. 425 or consent of instructor.
Readings on significant problems and issues in modern diplomatic history, accompanied by group analysis and interpretation.

628. European Thought and Culture of the Enlightenment. (3:3:0) Prerequisite: Hist. 320.
Intellectual and cultural movements of the seventeenth and eighteenth centuries, emphasizing the rise of scientific thought and rationalism.

629. European Thought and Culture since 1800. (3:3:0) Prerequisite: Hist. 429.
The most influential intellectual ideas of the nineteenth and twentieth centuries—their forms of expression and their impact on the contemporary world.

631. Problems in Russian History. (3:3:0) Prerequisites: Hist. 330 and 331 or consent of instructor.
Detailed examination of the Russian revolutionary movement and the development of communism.

635. Problems in Tudor and Stuart History. (3:3:0) Prerequisite: Hist. 436.
Examination of major sources and historical problems of sixteenth- and seventeenth-century England.

640R. Problems of Asian History. (3:3:0 ea.) Prerequisite: some previous study of Asia.
Analysis and interpretation of selected problems and themes, based on broadly selected readings.

648R. Asian Thought and Culture. (3:3:0 ea.) Prerequisites: Hist. 340 and 341.
Reading and analysis of important institutions and aspects of Asian development.

650. Latin America. (3:3:0) Prerequisites: Hist. 351 and 352.
Advanced study of the general historical development of Latin America—colonial and national periods.

660. Problems in Western History. (3:3:0) Prerequisites: Hist. 462 and 463.
Major interpretations and themes in the history of the American West.

665. Problems in Mormon History. (3:3:0) Prerequisites: RelC. 341 and 342, or consent of instructor.
In-depth study of Mormon historiography, sources, and historical literature, and experience in working from primary sources in Church archives and other depositories.

666. Problems in Utah History. (2:2:0) Prerequisite: Hist. 466.
Reading documents in depth and discussing interpretations of important events in Utah history.

681. Sources and Problems in American Intellectual History. (3:3:0) Prerequisites: Hist. 471, 472.
Intensive reading of source materials in intellectual and social history.

682. Problems in American Church History. (3:3:0) Prerequisite: graduate standing.
Controversial issues in church history: nature of Puritanism, impact of religion on American culture, influence of religion on reform, nature of social gospel, and neo-orthodoxy.

690R. Graduate Seminar in History. (1-3:0:0 ea.)

698R. Special Readings in History. (1-2:0:Arr. ea.)

699R. Master's Thesis. (6-9:Arr:Arr. ea.)

798R. Special Readings in History. (1-2:0:Arr. ea.)

799R. Doctoral Dissertation. (Arr.)

Home and Family Development

Coordinator: L. Taylor (206 SFLC)

Undergraduate Program

Interdisciplinary Work in the College of Family Living

The program is for students who are interested in a general program drawing from several or all departments in the College of Family Living and who are not interested in preparing for a professional career.

Associate Degree

The two-year program leading to the Associate of Science degree in home and family development is designed for students who wish to become more proficient in homemaking skills and to increase their ability to cope with the responsibilities associated with marriage and parenthood.

Departmental courses may be chosen from one or more departments in the College of Family Living, provided the specified prerequisites are met for a particular course. Upon completion of this program, a student may find it desirable to transfer to a four-year program leading to a baccalaureate degree in the College of Family Living.

General Education Requirements

See the general education programs section of this catalog.

Departmental Requirements

Courses may be selected from one or more of the following departments:

Child Development and Family Relationships	
Clothing and Textiles	
Family Resource Management	
Food Science and Nutrition	
Interior Environment	
Total hours	30

An associate degree in home and family development may be taken entirely by Home Study. For more information on this program, contact the Home Study office or the advisement center.

Bachelor's Degree in Home and Family Development

This program is designed for students who want a composite major in the College of Family Living without a teaching certificate. It is ideal for the student who is seeking to develop skills for the enrichment of family life and who is not concerned with preparing for a specific career or occupation. This program is also suggested for those students who would like to major in the college but who have not yet decided upon which department.

The requirements for this major are as follows: a) completion of the University general education requirements as outlined in the catalog; b) a minimum of 36 credit hours in **three** (minimum of 12 hours in each) of the following five departments: Child Development and Family Relationships, Clothing and Textiles, Family Resource Management, Food Science and Nutrition, and Interior Environment; **and** c) at least one class in each of the two remaining departments.

Students needing advisement or information are referred to the College of Family Living Advisement Center in 206 SFLC.

Family Studies

Professors. H. Bahr, Burr, Christiansen, Kunz, Moss, Rollins (Coordinator), Thomas
Associate Professors. Albrecht, S. Bahr, Chadwick, Condie, Olson.
Assistant Professors. Galbraith, McKee, Smith.

Program. The Family Studies Program is an interdepartmental Ph.D. program sponsored by the CDFR and Sociology departments. Students in this program can major in CDFR or sociology or they can have majors in both CDFR and sociology (a dual major).

Entrance Examinations Required. Graduate Record Examination, including aptitude tests and advanced sociology or psychology aptitude tests if students have majored in these areas. Students applying for admission must also submit samples of their written work.

Application Consideration Dates. February 1 each year. Since applications have to be processed through the Graduate School before they come to the program and departments, students should submit them well before the February 1 deadline. Only when there are very unusual circumstances are students admitted at other times.

Entry Times. Usually Fall Semester, but other times are also permitted.

Prerequisites. A master's degree or the equivalent.

Minors Permissible. Any minor field approved by the advisory committee.

Additional Information. For additional information about requirements, courses, examination procedures, etc., see the listings under the two departments or write to Family Studies Program, 203 SFLC.

Home Economics Education

Professor: Brasher (Chairman, 2234-B SFLC).
Assistant Professor: Ellsworth, Jensen.
Instructor: Irvine, McAulay, Schofield.

Undergraduate Program

The Department of Home Economics Education offers a composite major leading to the Bachelor of Science degree and vocational certification through the State Department of Public Instruction.

The major purpose of the department is to prepare students for professional roles in public schools, in cooperative extension services and other government agencies, in business and industry, and for enrichment of family life.

Students are required to (1) have at least a 2.25 grade-point average and (2) pass a grammar and spelling test administered by the Teacher Certification Office unless a score of 20 or higher has been achieved in the English portion of the ACT prior to SecEd. 276.

Due to the interrelationship and sequence of courses in the major, it is imperative that students seek advisement in the college advisement center at the earliest possible date. Careful planning will allow the student to move through the program efficiently.

A number of courses required in the major are offered during Spring and Summer Terms. It is possible, therefore, for a student who elects to attend Spring and Summer Terms to complete requirements for graduation in three calendar years.

Home Economics Education—Composite Major

Required Courses

Home Economics Education 101† (1); 375**† (2), and 489 (2) (each block Fall Semester and Spring Term).

CDFR
- 210 (3) Child Development
- 422 (4) Methods and Practicum in Early Childhood Education
- 362 (3) The Child in the Family
- 3 hours from 360, 445, 461

- Clothing and Textiles
  - 165 (4) Dress and Pattern Construction
  - 260 (3) Textiles
  - 2-3 hours from 110, 235, and 300 during the sophomore year
  - 2-3 hours from 110, 235, 300, and 355 during the junior year
- FRM
  - 220 (1) Management for Individuals and Families
  - 335, 336 (3) Household Equipment
  - 370†(2) Residence Management (apply one year in advance, 1216 SFLC)
  - 2-3 hours from 240, 260, and 360
- FSN
  - 235 (4) Basic Human Nutrition
  - 236 (1) Laboratory Experience in Nutrition
  - 264, 265 (5) Introduction to Food Science
  - 340 or 373 (2) Meal Management or Quantity Food Production and Service
- Interior Environment
  - 240 (3) Introduction to Interior Environment
- Nursing
  - 425†(2) Home Nursing Instructorship
- Secondary Education
  - 276**†(4) Exploration of Teaching (each block Fall Semester and Spring Term)
  - 376R†(3) Theory and Methods of Secondary Teaching
  - 476 (14) Secondary Teacher Education (full semester)

†Block plan

** Semester before student teaching

General Education Requirements

See the general education programs section of this catalog and consult the college advisement center.

Graduate Program

Program. A Master of Science (M.S.) degree is also offered in the department.

Application Consideration Dates. Same as Graduate School deadline.

Entry Times. Any regular registration.

Prerequisites. Undergraduate emphasis in home economics education.

Tool Preparation. Statistics and research methodology.

Field. Home economics education.

Minors Permissible. Option 1—any established minor in the College of Family Living, or other colleges as approved by graduate committee, Option 2.

Requirements. Minimum of 24 semester hours plus thesis (6-hr. min.).

Required Courses. HomEc. 530, 532, 630, 650, and 689.

Courses

101. Concepts of Home Economics Education. (1:1:0)

375. Curriculum Development in Home Economics Education. (2:2:0) Prerequisite: concurrent registration in SecEd. 276.

489. Extended Programs in Vocational Home Economics Education. (2:1:2) Prerequisite: HomEc. 375.

Examination of home economics education programs for adults and out-of-school youth

521R. Workshop in Home Economics Education. (1-2:Arr.: Arr. ea.) Prerequisite: consent of instructor.

530. Home Economics Education for Adults. (2:2:0) Prerequisites: HomEc. 489, consent of instructor

Principles, practices, programs, materials, and resources for teaching to adults.

532. Program Evaluation in Home Economics Education. (2:2:0) Prerequisite: SecEd. 476 or consent of instructor.

Evaluation techniques and construction of evaluation devices unique to home economics.

630. Methods and Curriculum in Home Economics Education. (3:3:0)

Intensive study of methods of teaching and curriculum development.

650. Organization and Administration of Home Economics Education Programs. (3:3:Arr.)

689. Theoretical Foundation of Home Economics Education. (3:3:Arr.)

Examination of social and educational forces which affect individuals and families.

693R. Independent Readings and Conference. (1-3:Arr.:Arr. ea.)

699R. Master's Thesis. (6-9:Arr.:Arr. ea.)

Honors

Director: Reba L. Keele, Associate Professor of Honors Studies.
Associate Directors: Philip M. Flammer, Associate Professor of History, and Larry H. Peer, Associate Professor of Humanities
Professor of Honors Studies: Marion J. Bentley.
Associate Professor of Honors Studies: Reba L. Keele.

Undergraduate Program

The Honors Program provides special academic opportunities in general education for undergraduates of exceptional promise. Open to qualified students in every college of the University, it seeks to enrich rather than shorten their academic experience. Students participate in Honors while completing the degree requirements of their respective departments

Courses

The Honors student has access to a special Honors general education curriculum consisting of Honors seminars in specialized topics representing a variety of disciplines. These courses, typically small in size and demanding in content, are taught by outstanding faculty members from the established University departments.

Individual Curriculum Planning

Honors students tailor their general education courses to their own objectives and interests, subject to the directorate's approval and the guidelines of the general education program. Extensive individual advisement from both program and University sources is available to students as they plan their course work and their careers. Periodically, students give the directorate an accounting of their work, and their progress is reviewed in detail at least annually by an officer of the program. In their sophomore and senior years students submit a comprehensive review of their work, on the basis of which they may be awarded an Honors designation at graduation. Students seeking the designation of Highest Honors are, in addition, interviewed in an oral examination by a faculty panel.

Independent Learning Experiences

Particularly as upperclassmen, Honors students are required to undertake an independent learning project under the direction of a faculty adviser. Such a project is often related to the student's individual career, it may be a scholarly essay, a creative work, a research or teaching assistantship, internship, or traineeship. Some independent learning projects are carried out in off-campus locations, among these are projects involving educational, social, technological, or medical work in underdeveloped areas of both the United States and other countries. Academic credit is given for approved projects that entail substantial scholarship: of these, the most outstanding earn for their authors the designation "University Scholar."

Extracurricular Activities

The Honors Program sponsors extracurricular activities designed to provide intellectual stimulation and to encourage student interaction. Lectures, colloquia, films, and professional entertainment are regularly offered under the direction of student administrative committees.

Admission

Students may apply for Honors Program membership at the time application is made for admission to the University or at any time before the final year of their college career (the earlier the better). Admission criteria include indications of intellectual power, motivation, and self-discipline as revealed in examinations, academic records, recommendations, essays, and interviews. Every effort is made to keep the doors leading into and out of the program open, so that places are always available to students who awaken intellectually after coming to college. Application forms and additional information about Honors at BYU may be obtained by contacting the Honors Program, 4012 HBLL.

Courses

100. Special Studies in Honors. (1-2:0:0)
For students in the Late Summer Honors Program. Individual and small group participation in directed studies with selected faculty members.

101. Special Studies in General Education. (½-3:0:0)
Proposed general education courses will be piloted under this course number.

115. Readings in Contemporary Thought. (5:3:2)
Essential background in contemporary issues through discussions, guest lectures, and written essays based on texts treating the human legacy, society, science, ethical challenges, aesthetics, etc.

201R. Language. (3-5:0:0 ea.) Prerequisite: designated by section.
Intensive study of topics in semantics, grammar, linguistics, rhetoric, or history of language.

202R. Literature. (3-5:0:0 ea.)
Intensive study of topics.

203R. The Arts. (3-5:0:0 ea.)
Intensive study of topics in the fine arts.

204R. Philosophy. (2-5:0:0 ea.)
Intensive study of topics in philosophy and such related areas as religious and moral thought.

206R. History. (2-5:2-5:0 ea.) (G-R 2 hrs.)
Intensive study of topics in history and such related areas as archaeology.

207R. Behavior and Society. (3-5:0:0 ea.)
Intensive study of topics in psychology, psychiatry, sociology, organizational behavior, and anthropology.

208R. State and Economy. (3-5:0:0 ea.)
Intensive study of topics in political science, internal relations, jurisprudence, economics, and political and economic geography.

211R. Mathematics and Its Applications. (3-5:0:0 ea.)
Intensive study of topics in mathematics and its uses in statistics, computer programming, and the various sciences.

212R. The Physical World. (3-5:0:0 ea.)
Intensive study of topics in physics, astronomy, chemistry, geology, technology, and physical geography.

213R. Biology. (3-5:0:0 ea.) Prerequisites: Honors 211R and 212R or consent of instructor.
Intensive study of topics in the life sciences and such related areas as medicine and agriculture.

299R. Co-op Ed.: Work Study (0-9:0:0 ea.) Prerequisite: acceptance of proposal by Honors directorate and, where applicable, by department chairman.
Faculty-advised University Scholar or other paraprofessional project.

310. Reasoning and Composition. (5:0:0)
Intensive development of skills in reasoning, composition, and critical reading.

315. Reading the Classics. (8:3:2)
Essential background in the classics through discussions, guest lecturers, and written essays based on intensive and cursory reading of key literary-philosophical texts.

399R. Co-op Ed.: Work Study. (0-9:0:0 ea.) Prerequisite: acceptance of proposal by Honors directorate and, where applicable, by department chairman.
Faculty-advised University Scholar or other paraprofessional project.

401R. Special Studies in Humanities. (3-5:5:0 ea.)
Selected issues, generally of a synthesizing or interdisciplinary nature, for mature or advanced students.

402R. Special Studies in the Natural Sciences. (3-5:5:0 ea.)
Selected issues, generally of a synthesizing or interdisciplinary nature, for mature or advanced students.

403R. Special Studies in the Social Sciences. (3-5:5:0 ea.)
Special studies, generally of a synthesizing or interdisciplinary nature, for mature or advanced students.

497R. Directed Studies. (1-9:0:0 ea.) Prerequisites: acceptance of proposal by Honors directorate and, where applicable, by department chairman.
Faculty-advised University Scholar or other paraprofessional project.

Humanities, Classics, and Comparative Literature

Professors: R. Britsch, T. Britsch (Chairman, 113 JKBA), J. R. Clark, Phillips.
Associate Professors: Bassett, S. K. Brown, H. Davis, Green, Mackay, Marshall, Peer.
Assistant Professors: Griggs, Shumway, Sondrup, G. Tate.
Instructor: Duckwitz.
Special Instructor: Potter.

The fields of humanities, classics, and comparative literature offer, collectively and individually, a rich liberal arts education, disciplined by insistence on substantial foreign language skills and critical thought and writing—a combination that makes any one of the department's majors an excellent preparation for graduate work in humanistic or professional (especially legal) disciplines, and for a wide range of employment, including secondary teaching in humanities or Latin. The department offers the Associate of Arts degree in humanities and classical civilization, the Bachelor of Arts degree in humanities, comparative literature, Greek, and Latin, and the Master of Arts degree in humanities, classics, and comparative literature.

General Education. The department currently administers the following GE evaluations (preparatory courses are indicated in parentheses):
Category II: Basic Humanities (Hum. 101); Western Humanities 1 and 2 (Hum. 201, 202); Asian Humanities (Hum. 240); American Humanities (Hum. 261); Introduction to Literature: Classical Literature (ClCiv. 110); and Greek and Roman Mythology (ClCiv. 341).
Category III: Greek (Greek 201); and Latin (Latin 201).

Humanities Undergraduate Program

For capable students in the humanities whose educational objectives are not met by a conventional major in one department and a minor in another, the University offers an interdepartmental major and minor including 53 or 54 semester hours in art, history, literature (including foreign literature), music, and philosophy. Students are advised to support these subjects with additional courses in philosophy, the social sciences, and other related areas. Students will also complete a foreign language program sufficient for the Bachelor of Arts degree. Of the 53 or 54 semester hours required in humanities, art, history, literature, music, and philosophy, at least 25 must be upper-division work.

Although the educational and vocational goals of most students are perhaps best served by a conventional major and minor, selected students will profit from broader training which includes intensive work in several of the humanities subjects. Such a program has broad cultural value. Through it, students may acquaint themselves with the relationships among the various humanities subjects and obtain a valuable liberal education consisting of substantial, well-balanced work in the broad field of the humanities. Students in humanities may also certify to teach by emphasizing either English or one of the foreign languages in a composite major program. (See the Department of Education section of this catalog.)

It is recommended that students arrange their course sequence so that historical relationships can be observed as far as possible; for example, it is desirable to take courses emphasizing early periods in art or history or music simultaneously.

Students may enter the humanities program only with permission of the chairman or the coordinator of the College of Humanities Advisement Center.

Requirements for the Associate of Arts Degree in Humanities

General Education and University Requirements	**Hours**
See the general education programs section of this catalog.	33
Language. A single foreign language through the 201 level is required. If previous training or experience allows a student to begin at a higher level than 101 (e.g., 201), the credits saved in language (e.g., 8 hrs. from 101, 102) may be taken in electives	12
Course Requirements. Hum. 201, 202, and either 240 or 261	9
Either ClCiv. 110, 140 **and** 341, or CompLit. 355	3
One course selected from art and design, literature (either comparative or a single national literature), history, music, or philosophy (must be selected from the following list of approved courses	3
Electives	4
Total	64

Required Courses for the Bachelor of Arts Degree in Humanities

Language. The student must demonstrate a thorough knowledge of a foreign language relevant to his or her course of study by successfully completing at least one 400-level literature course in a foreign language.

Course Requirements. Hum. 201, 202, 240, 261, 311 and 490R ... 18 hours
Primary Emphasis Area ... 12 hours
Selected either from art and design, literature (either comparative or a single national literature), history, music, or philosophy.
One section of CompLit. 420R ... 3 hours
Either ClCiv. 110, 140 **and** 341, CompLit. 355 ... 3 hours
or a 400-level literature course in Greek or Latin.
Phil. 352 (Aesthetics) ... 3 hours

Supporting Course Work. Fourteen or 15 hours are to be selected from the following list of approved courses. In choosing some of the courses in this category, the student should attempt to study at least one period horizontally (e.g., medieval art, music, literature, etc.) or to focus on a particular culture (e.g., Asian, American). Descriptions of several possible courses of study (e.g., Asian emphasis, classics emphasis) are available from the department secretary, and the student is urged to work closely with a member of the department faculty in planning his or her program.

Total ... 53 or 54 hours

List of Approved Courses

Art and Design
101 (2) Introduction to Art
102 (2) Basic Design for Nonmajors
103 (2) Drawing for Nonmajors
107 (2) Painting for Nonmajors
110 (2) Design in Everyday Life
207R (2 ea.) Advanced Painting for Nonmajors
310 (3) Survey of Western Architecture
311, 312 (3 ea.) Survey of Art and Architecture
313 (3) Survey of Oriental Art and Architecture
400R (3 ea.) Individual Study in Art History
401 (3) Ancient and Primitive Art
402 (3) Greek Art and Architecture
403 (3) Roman Art and Architecture
405 (3) Medieval Art
406 (3) Italian Renaissance Art
407 (3) Northern Renaissance Art
408 (3) Baroque Art
409 (3) American Architecture and City Planning
410 (3) American Art
411 (3) Nineteenth-Century European Art
412 (3) Contemporary Art
415R (3 ea.) Special Topics

Classical Civilization
110 (3) Greek and Latin Masterpieces in English Translation
140 (1) Classical Myths in Art
331R (3 ea.) Topics in Greek and Latin Literature in English Translation
341 (3) Greek and Roman Mythology
443 (3) Latin and Greek Literature in the Middle Ages
461 (3) Greek Drama in English Translation

Comparative Literature
310 (3) Introduction to Literary Analysis and Comparative Literature
339R (3 ea.) French Literature in Translation
340R (3 ea.) Russian Literature in Translation
341R (3 ea.) Masterpieces of German Literature in Translation
342R (3 ea.) Chinese Literature in Translation
343R (3 ea.) Japanese Literature in Translation
344R (3 ea.) Masterpieces of Scandinavian Literature
346R (3 ea.) Hispanic and Brazilian Literature in Translation
355 (3) Classics of the Western World: Homer to Dante
356 (3) Survey of European Literature: Renaissance to Modern
420R (3 ea.) Studies in Periods and Movements
430R (3 ea.) Studies in Literary Genres
440R (3 ea.) Studies in Themes and Types
450R (3 ea.) Studies in Literary Relations
460R (3 ea.) Studies in Literary Theory
490R (3 ea.) Seminar in Comparative Literature

English
- 251 (3) Fundamentals of Literature
- 260 (3) Vital Themes in American Literature
- 270 (3) Masterpieces of English Literature
- 301 (4) Early Masters of English Literature
- 302 (4) Later Masters of English Literature
- 303 (4) Masters of American Literature
- 332 (3) The Early English Novel
- 333 (3) The Later English Novel
- 335 (3) The Nineteenth-Century American Novel
- 336 (2) The Twentieth-Century American Novel
- 337 (3) Contemporary Fiction
- 341 (3) English Drama
- 343 (3) Modern English and American Drama
- 350 (2) The Bible as Literature
- 351 (3) The Criticism and Appreciation of Literature
- 361 (3) Early American Literature
- 362 (3) Later Nineteenth-Century American Literature
- 363 (3) American Literature from 1914 to Mid-Century
- 364 (2) The Literature of the American West
- 366 (2) Modern Poetry
- 371 (3) English Literature to 1500: The Medieval Period
- 372 (3) English Literature from 1500 to 1660: The Renaissance Period
- 373 (3) English Literature from 1660 to 1780: The Classical Period
- 374 (3) English Literature from 1780 to 1832: The Romantic Period
- 375 (3) English Literature from 1832 to 1890: The Victorian Period
- 376 (3) English Literature from 1890 to 1950
- 381 (3) Chaucer
- 382 (3) Shakespeare
- 383 (2) Milton
- 391 (3) Introduction to Folklore
- 392 (3) American Folklore
- 500R (1-3 ea.) Eminent American Writers
- 510R (1-3 ea.) Eminent English Writers

History
- 110, 111 (3 ea.) World Civilization 1, 2
- 300 (3) Ancient Near East
- 302 (3) Medieval and Modern Near East
- 304 (3) Greek History and Civilization
- 307 (3) Roman History and Civilization
- 310 (3) The Early Middle Ages
- 311 (3) The Late Middle Ages
- 312 (3) The Renaissance: Age of Transition
- 313 (3) The Reformation: Age of Turmoil
- 320 (3) The Age of Enlightenment
- 322 (3) Nineteenth-Century Europe
- 323 (3) Europe in the Twentieth Century
- 340 (3) Premodern Asia
- 341 (3) Modern Asia
- 429 (3) European Intellectual History since the Enlightenment
- 445 (3) History of Asian Religions and Thought
- 471 (3) U.S. Intellectual and Social History to 1865
- 472 (3) U.S. Intellectual and Social History since 1865
- 488 (3) Historiography

Humanities
- 101 (3) An Introduction to the Humanities

Languages
- Chinese
  - 441, 442 (4 ea.) Classical and Documentary Chinese
  - 443 (4) Modern Chinese Literature
  - 445 (3) Chinese Culture
- French
  - 440 (4) Historical Survey of French Literature
  - 441, 442 (3 ea.) Survey of French Literature and Culture
  - 443 (3) French Literature of the Nineteenth Century
  - 444 (3) French Literature of the Twentieth Century
  - 445 (3) Introduction to French Civilization
- German
  - 401 (3) Cultural History of German-speaking Peoples
  - 440 (4) Survey of German Literature and Culture
  - 441 (3) German Literature from the Beginning to 1700
  - 442 (3) German Literature in the Eighteenth Century
  - 443 (3) German Literature in the Nineteenth Century
  - 444 (3) German Literature in the Twentieth Century
- Greek
  - 429 (3) Greek Stylistic and Literary Analysis
  - 431 (3) Homer, The Odyssey
  - 432 (3) Heroditus
  - 441 (3) Greek Lyric Poetry
  - 442 (3) Sophocles and Euripides
  - 445 (3) Classical Greek Culture
  - 530 (3) Thucydies
- Italian
  - 440 (4) Survey of Italian Literature
  - 445 (3) Introduction to Italian Civilization
  - 460 (3) The Age of Dante
  - 465 (3) Italian Literature of the Renaissance
  - 470 (3) Italian Literature of the Romantic Period
  - 485 (3) Italian Literature of the Twentieth Century
- Japanese
  - 443, 444 (3 ea.) Modern Japanese Literature
  - 445 (3) Japanese Culture
- Latin
  - 429 (3) Latin Stylistic and Literary Analysis
  - 430 (3) Livy
  - 431 (3) Vergil
  - 432 (3) Horace and Catullus
- Portuguese
  - 441 (4) Survey of Portuguese Literature
  - 445 (2) Iberian Culture
  - 451 (4) Survey of Brazilian Literature
  - 455 (2) Ibero-American Culture
- Russian
  - 440 (2) Russian Literature from the Beginning through the Eighteenth Century
  - 441 (3) Survey of Russian Literature in the Nineteenth Century
  - 442 (3) Survey of Russian Literature in the Twentieth Century
- Scandinavian
  - 401 (3) Cultural History of Scandinavia
  - 441 (4) Dano-Norwegian Literature
  - 445 (4) Swedish Literature
  - 447 (4) Finnish Literature
- Spanish
  - 439 (3) Elements of Literary Analysis
  - 441 (4) Survey of Spanish Literature
  - 445 (3) Iberian Civilization
  - 451 (4) Survey of Hispanic-American Literature
  - 454 (3) Hispanic-American Novel
  - 455 (2) Ibero-American Culture
  - 458 (3) Hispanic-American Short Story
  - 470R (3 ea.) Golden Age Literature

Music
- 101 (3) Introduction to Music (not for music emphasis)
- 103 (2) Survey of Music Literature
- 195 (2) Expanding Musicianship Core 1 (music emphasis only)
- 303 (3) World Music Cultures
- 484, 485 (3 ea.) History of Music

Note: Humanities majors are also encouraged to take one or two of the many participation courses offered by the Music Department.

Philosophy
- 110 (3) Foundations of Philosophical Thought
- 221 (3) Ancient and Medieval Origins of Western Philosophy
- 222 (3) The Emergence of Modern Philosophy
- 352 (3) Aesthetics
- 371R (2-5 ea.) Topics in Philosophy
- 372R (2-5 ea.) Figures in Philosophy
- 373R (2-5 ea.) Historical Movements in Philosophy

Graduate Program

Program. Master of Arts (M.A.).

Entrance Examination Required. None.

Application Consideration Dates. Same as Graduate School deadlines.

Entry Times. Any regular registration.

Language Prerequisite. Successful completion of at least one 400-level literature course in a foreign language.

Requirements. Minimum of 24 semester hours plus thesis (6-hr. min.—699R).

Course Work. Two sections of Hum. 620R (in different periods); two sections of Hum. 690R (on different topics); and 12 additional hours in literature, music history, art history, philosophy, or history, selected in consultation with the student's committee, to total 24 hours.

Examinations

1. By the end of his or her second semester of residency, the student must pass a general written examination on western humanities, covering somewhat more intensively the material offered in Hum. 201-202. A reading list and syllabus may be obtained from the department secretary.
2. The final oral examination will cover the student's areas of concentration and will include the thesis defense.

Courses

101. An Introduction to the Humanities. (3:3:0) Home Study also. (G-HA)
Applied aesthetics, emphasizing forms and relationships of the major arts—literature, painting, sculpture, architecture, and music.

140. (Hum.-ClCiv.) Classical Myths In Art. (1:1:0)
Introduction to the gods, heroes, and myths of the Greeks and Romans as illustrated in their art. Slide-illustrated lectures.

201. The Arts in Western Culture: Age of Greece to Renaissance. (3:3:0) (G-HA)
Development of the major arts—literature, painting, sculpture, architecture, and music—in the Greek and Roman periods, the Middle Ages, and the Renaissance.

202. The Arts in Western Culture: Late Renaissance to the Modern Age. (3:3:0) (G-HA)
Development of the major arts—literature, painting, sculpture, architecture, and music—from the late Renaissance to the present.

240. (Hum.-Asian) Introduction to the Humanities of Asia. (3:3:0) (G-HA)
The major arts of Asian cultures in their historical, religious, and philosophical settings.

261. The Arts in American Culture. (3:3:0) (G-HA)
Development of the major arts—literature, painting, sculpture, architecture, and music—in America from colonial times to the present.

300R. European Humanities and the Arts. (5:4:2)

311. Methodology and Theory of Comparative Study of the Humanities. (3:3:0) Prerequisite: Hum. 201, 202, or consent of instructor.

341. (Hum.-ClCiv.) Greek and Roman Mythology. (2:2:0)
Greek and Roman gods, goddesses, and myths.

342. (Hum.-Asian) Oriental Mythology. (2:0:0)
Discussion of myths, legends, and folkloric traditions in Oriental cultures.

345. (Hum.-Russian) Cultural Survey of Russia. (3:3:1)
Study in English of Slavic culture, emphasizing Russia.

☐ **English 391. Studies in Folklore.** (3:3:0)

401. (Hum.-Scand.) Cultural History of Scandinavia. (3:3:0) (G-HA)
Scandinavian culture from the Vikings to the present. Works may be read in English translation.

445. (Hum.-Japanese) Japanese Culture. (3:3:0)
Aspects of culture, visual arts, and religious and philosophical thought that produce the unique Japanese character. Works may be read in English.

446. (Hum.-Chinese 445) Chinese Culture. (3:3:0) Prerequisite: consent of instructor.
Introduction to institutions, culture, and fine arts of China. Works may be read in English.

490R. Seminar in Humanities. (3:3:0) Prerequisite: senior status with major in humanities or a related discipline.
Extensive reading, analysis, and presentation of papers concerning problems in the humanities—period classification, relationships between the arts, and current critical practice.

595R. Directed Readings. (1-2:Arr.:Arr. ea.)

620R. Period Studies in the Humanities. (3:3:0)
Topics vary.

690. Seminar in the Humanities. (3:3:0)
Topics vary.

699R. Master's Thesis. (6-9:Arr.:Arr. ea.)

Classics

Undergraduate Program

The Classics area of the Department of Humanities, Classics, and Comparative Literature offers instruction in classical civilization and in the languages of Coptic, Greek, and Latin. The classical languages, Greek and Latin, are indispensable tools for prospective students in classics, biblical and early Christian studies, ancient history, romance philology, and comparative literature. They are also strongly recommended for the study of linguistics and all literature of the Western world. Greek is particularly necessary for students who are interested in the New Testament, and Greek and Latin are indispensable for the study of the Greek and Latin fathers.

Classical Civilization

The following courses presuppose no knowledge of the Greek or Latin languages and are open to all students. They are especially recommended for students who desire an understanding of the ancient tradition underlying modern literature in the Western world.

Requirements for the Associate of Arts Degree in Classical Civilization

1. Classics and Ancient History Courses

Classical Language—Greek or Latin 101, 102, 201, 301	16
ClCiv 110	3
ClCiv 331R	3
ClCiv 341	2
ClCiv 461	2
Greek 445 or Latin 441 and 442	3 or 6
Hist 304 or 307	3
Total hours	32 or 35

2. General Education Courses

See the general education programs section of this catalog.

Other recommended courses, but not allowed as substitutions to the classics and ancient history courses listed above are—
ArtDs 402 (3) Greek Art and Architecture
ArtDs 403 (3) Roman Art and Architecture
Phil. 221 (3) Ancient and Medieval Origins of Western Philosophy

Graduate Program

Program. Master of Arts (M.A.).

Entrance Examination Required. Graduate Record Examination (general aptitude).

Entry Times. Fall Semester recommended.

Prerequisites. Undergraduate major in Latin or Greek or their equivalent and reading knowledge of French or German.

Field. Classics (with an area of emphasis in Greek, Latin, or the teaching of Latin).

Minors Permissible. Any established minor in the humanities or the sciences; Option 2.

Requirements. Minimum of 24 semester hours plus thesis (6-hr. min—699R).

Required Courses. None.

Courses

100R. Special Classics Summer Seminar. (1:1:0 ea.)
Classical sampler for students desiring an introduction to the daily life of the ancient Greeks and Romans, their mythology, art and literature, history and philosophy.

110. Greek and Latin Masterpieces in English Translation. (3:3:0) (G-HA)
Introduction to eminent Greek and Roman authors: Homer, Aechylus, Sophocles, Euripides, Vergil, Horace, Catallus, Plautus, Juvenal, etc.

140. (ClCiv.-Hum.) Classical Myths in Art. (1:1:0)
Gods, heroes, and myths of the Greeks and Romans as illustrated in their art. Slide-illustrated lectures.

331R. Topics in Greek and Latin Literature in English Translation. (3:3:0 ea.) (G-HA)
Studies in Greek and Latin epic, lyric, drama, literary theory, oratory and rhetoric, satire, and historical and philosophical writers.

341. (ClCiv.-Hum.) Greek and Roman Mythology. (2:2:0) (G-HA)
Greek and Roman gods, goddesses, and myths.

443. Latin and Greek Literature in the Middle Ages. (3:3:0)
Influence of the classical heritage on medieval literature, emphasizing history, epic, romance, theatre, and writings of church fathers.

461. Greek Drama in English Translation. (2:2:0)
Selected plays of Aeschylus, Sophocles, Europides, Aristophanes, and Menander.

620. World's Chief Languages. (2:0:0)

Greek

A major in Greek requires 32 hours of course work, which must include Greek 201, 301, 321, 431, 432, 445; ClCiv. 110; either ClCiv. 341 or 461; and 7 hours from Greek 411, 429, 441, 442. A departmental minor in Greek requires 20 hours of course work in Greek beyond the first year.

Courses

101, 102. Elementary Greek. (4:4:0 ea.)

201. Intermediate Greek Reading and Composition. (4:4:1)

301. Classical Greek Poetry: Homer's Iliad. (3:3:0) (G-HA) Prerequisite: Greek 201 or consent of instructor.

302. Classical Greek Prose. (2:2:0) Prerequisite: Greek 201 or equivalent.

321. Third-Year Grammar and Composition. (3:3:0) Prerequisite: Greek 301 or equivalent.
Exercises in the composition of easy Greek prose, correlated with readings in the Attic Orators.

411. New Testament in Greek: Gospels. (3:3:0) Prerequisite: Greek 201 or equivalent.

429. Greek Stylistic and Literary Analysis. (3:3:0) (G-HA) Prerequisite: Greek 322 or equivalent.
Exercises in criticism of Greek prose and poetry.

431. Homer, the Odyssey. (3:3:0) Prerequisite: Greek 301 or equivalent.

432. Herodotus. (3:3:0) Prerequisite: Greek 301 or equivalent.

441. Greek Lyric Poetry. (3:3:0) Prerequisite: Greek 301.

442. Sophocles and Euripides. (3:3:0) Prerequisite: Greek 301.

445. Classical Greek Culture. (3:3:0) (G-HA)
Conducted in English

490R. Individual Study in Greek. (1-3:Arr.:0 ea.) Prerequisite: Greek literature, excluding 301.

530. Thucydides. (3:3:0).

561. Attic Orators. (3:3:0) Prerequisite: consent of instructor.

590R. Directed Readings in Greek. (1-2:Arr.:0 ea.) Prerequisite: B.A. degree in Greek or equivalent.

612. Readings in Greek: Paul's Letters. (3:3:0) Prerequisite: Greek 411 or consent of instructor.

613. Readings in Greek: Epistles and the Apocalypse. (3:3:0) Prerequisite: Greek 411 or consent of instructor.

665. The Greek Historians. (3:3:0) Prerequisite: consent of instructor.

671. Homer. (3:3:0) Prerequisite: consent of instructor.

679. The Greek Dramatists. (3:3:0) Prerequisite: consent of instructor.

694R. Seminar in Literature. (3:3:0 ea.) Prerequisite: consent of instructor.

Latin

A major in Latin requires 32 hours of course work, which must include Latin 201, 301, 321, 322, 431, 432, 441, 442; ClCiv. 341 and 110; and either Latin 429 or 561. A teaching major in Latin must also include Latin 377. A departmental minor in Latin requires 20 hours of course work in Latin beyond the first year. A teaching minor in Latin must also include Latin 377.

Courses

101, 102. First-Year Latin. (4:4:0 ea.)
For those who have had no Latin. Mastery of pronunciation, declensions, and conjugations. Correlation of Latin originals with English derivatives. Graded reading. Characteristics of Roman civilization.

111, 112. Beginning Latin—Accelerated. (4:4:0 ea.)

201. Second-Year Latin. (4:4:0) Prerequisite: Latin 102 or three units of Latin in high school.
Readings from Caesar, Livy, etc., with a review and continuation of grammar.

301. Classical Latin Poetry. (3:3:0) Prerequisite: Latin 201.
Selections from Ovid's *Metamorphoses* and Vergil's *Aeneid*, Book I.

302. Classical Latin Prose. (2:2:0) Prerequisite: Latin 201 or equivalent.
Cicero I, II; Catiline.

315. Prelegal Latin. (2:2:0) Prerequisite: consent of instructor.
Recommended for prelegal students.

316. Elements of Technical and Scientific Terminology. (3:2:0) Prerequisite: consent of instructor.
For premedical and predental students and students in the physical and natural sciences.

317. Latin for Archivists and Genealogical Researchers. (3:1:1)

321, 322. Third-Year Grammar and Composition. (3:3:0 ea.) Prerequisite: Latin 301 or 112 or equivalent.

377. Secondary Teaching Procedures. (3:3:1) Prerequisites: SecEd. 276 and Latin 322 or equivalent.

Skills mastery, hearing, speaking, reading, writing, and identification of teacher-pupil activities required for conceptual learning. Lectures, demonstrations, and application of linguistic techniques to practical classroom requirements.

429. Latin Stylistic and Literary Analysis. (3:3:0) (G-HA) Prerequisite: Latin 322 or equivalent.

430. Livy. (3:3:0) Prerequisite: Latin 302 or equivalent.

Selections from Livy's *Ab Urba Condita*.

431. Vergil. (3:3:0) Prerequisites: Latin 301 or 112 or equivalent or consent of instructor.

432. Horace and Catullus. (3:3:0) Prerequisites: Latin 301 or 112 or equivalent or consent of instructor.

441, 442. Survey of Latin Literature and Culture. (3:3:0 ea.) (G-HA)

Conducted in English.

479. Secondary Student Teaching. (4-8:1:20-40) Prerequisites: SecEd. 276; Latin 321, 377.

490R. Individual Study in Latin. (1-3:Arr.:0 ea.)

561. Medieval Latin. (3:3:0) Prerequisite: Latin 301 or 112 or equivalent.

621. Romance Philology. (3:3:0)

661. Cicero. (3:3:0)

665. The Latin Historians. (3:3:0)

671. Virgil. (3:3:0)

675. The Latin Poets. (3:3:0)

679. The Latin Dramatists. (3:3:0)

681, 682. The Latin Fathers. (3:3:0 ea.) Prerequisite: consent of instructor.

690R. Directed Readings. (1-2.Arr.:0 ea.)

692R. Seminar in Philology. (2:2:0 ea.)

694R. Seminar in Literature. (2:2:0 ea.)

Classical Languages Course.

321R. Coptic. (3:3:0 ea.) Prerequisite: consent of instructor.

Comparative Literature

Comparative literature as a discipline is the study of literature in the broadest and most general sense. Viewing literature from an international perspective, it seeks to overcome any prejudice or narrowness that might be associated with nationalistic studies of literature while neither denying nor minimizing the value and vitality of the different national traditions. It endeavors to answer questions that all but defy response with reference to a single literary tradition but invite investigation in a more comprehensive context. Comparative literature may be profitably pursued either as a discipline in its own right or as an adjunct to more specific literary studies.

Undergraduate Program

Language

A thorough knowledge of two langauges relevant to the student's program is required (one of these may be English if the student elects to emphasize English or American literature). Competence will normally be demonstrated in course work, but an examination may be required. Students planning advanced work in comparative literature should gain a reading knowledge of an additional modern language and a classical language.

Course Requirements

CompLit. 310; two sections of 420R (in different periods); two sections of 430R (in different genres); either 440R, 450R, or 460R, 490R; 355 or a 400-level literature course in Greek or Latin; and 12 additional hours in literature courses dealing with works in the original language. Students are strongly urged to supplement their programs with relevant courses in humanities, philosophy, and other related areas. Total: 36 hours.

Examination

During the last semester of residency the student will be required to take a written examination covering literary theory, the history of literature, problems of genre study, and other aspects of the student's individual program (in some cases an oral examination will also be required). Satisfactory performance on this examination is a requirement for graduation, which is not guaranteed simply by passing the required courses.

Advisement

Students are urged to work closely with a member of the comparative literature faculty in planning their course of study.

Graduate Program

Program. Master of Arts (M.A.).

Entrance Examination Required. None.

Application Consideration Dates. Same as Graduate School deadlines.

Entry Times. Any regular registration.

Prerequisites. Undergraduate major in the field of graduate emphasis or an undergraduate major or strong minor in each selected emphasis area.

Requirements. Minimum of 24 semester hours plus thesis (6-hr. min.—699R).

Language. A thorough reading knowledge of three languages, one of which must be German or French, and one of which may be English if the student chooses to emphasize English or American literature. Competence may be demonstrated either by examination or appropriate course work. Students planning advanced work in comparative literature should acquire a reading knowledge of another modern language and a classical language.

Course Work. CompLit. 610, two sections of CompLit. 620R (in different periods), two sections of CompLit. 630R (in different genres), and 9 additional hours of relevant literature courses.

Examination. During the last semester of residency, students will take a written and oral examination covering their areas of concentration and general literary theory. In addition to material specifically represented by course work, the student will be expected to have a sound knowledge of the primary and secondary texts on the Master's Reading List (available from the department office). The defense of the thesis will normally be in conjunction with the general oral examination.

Thesis. Students should contact the department chairman for details during their first semester of residency.

Minor. Although there is no minor in comparative literature at the M.A. level, students are invited to use comparative literature courses to support their work in other areas

Ph.D. Minor in Comparative Literature

A thorough knowledge of three literary traditions, one of which must be French or German, in two periods each. All readings **must** be done in the original language. Competence will be demonstrated in a written and an oral examination covering the student's areas of concentration. Students may be asked to demonstrate their facility with the languages relevant to their program during either or both of the examinations

Courses

310. Introduction to Literary Analysis and Comparative Literature. (3:3:0) (G-HA) Prerequisite: reading knowledge of at least one foreign language.
Methods of literary analysis, emphasizing basic issues of comparative literature and prosody and other problems related to foreign language texts.

339R. (CompLit.-French) French Literary Masterpieces in Translation. (3:3:0)
Topics vary.

340R. (CompLit.-Russian) Russian Literature in Translation. (3:3:0 ea.) (G-HA)
Introduction to nineteenth- and twentieth-century Russian literature. General survey Fall Semester; individual authors other semesters.

341R. (CompLit.-German) Masterpieces of German Literature in Translation. (3:3:0 ea.) (G-HA)
Reading and discussion of German literature in English translation. Topic varies each semester.

343R. (CompLit.-Japanese) Japanese Literature in Translation. (3:3:0 ea.) (G-HA)
Reading and discussion of Japanese literature in translation. Topics vary.

344R. (CompLit.-Scand.) Masterpieces of Scandinavian Literature. (3:3:0 ea.) (G-HA)
Topic varies each semester. Works may be read in English translation.

346R. (CompLit.-Spanish) Hispanic and Brazilian Literature in Translation. (3:3:0)
Readings from outstanding writers of Spain, Brazil, and Spanish America. Topics vary.

355. (CompLit.-Engl.) Classics of the Western World: Homer to Dante. (3:3:0) (G-HA)
Careful reading of major works of Homer, Aeschylus, Sophocles, Euripides, Virgil, and Dante in translation.

356. (CompLit.-Engl.) European Literature: Renaissance to Modern. (3:3:0) (G-HA)
European masterpieces of the Renaissance, neoclassicism, romanticism, realism, naturalism, and symbolism in translation.

☐ **English 391. Studies in Folklore.** (3:3:0)

420R. Studies in Periods and Movements. (3:3:0 ea.) (G-HA) Prerequisite: prior or concurrent enrollment in CompLit. 310 or consent of instructor.
Various literary periods, movements, etc., and the problems of periodization. Topics vary.

430R. Studies in Literary Genres. (3:3:0 ea.) (G-HA) Prerequisite: prior or concurrent enrollment in CompLit. 310 or consent of instructor.
Various genres (e.g., novel, epic, tragedy) and generic problems. Topics vary (meets conjointly with Engl. 338 when the topic is modern European novel).

440R. Studies in Themes and Types. (3:3:0 ea.) (G-HA) Prerequisite: prior or concurrent enrollment in CompLit. 310 or consent of instructor.
Major literary themes (e.g., Faust, Don Juan, Ulysses), types, motifs, and problems of literary typology. Topics vary.

450R. Studies in Literary Relations. (3:3:0 ea.) (G-HA) Prerequisite: prior or concurrent enrollment in CompLit. 310 or consent of instructor.
Interrelations of national literatures and figures and literature with other areas of knowledge (art, history, law, psychology, music, etc.). Topics vary.

460R. Studies in Literary Theory. (3:3:0 ea.) (G-HA) Prerequisite: prior or concurrent enrollment in CompLit. 310 or consent of instructor.
Critical theories of literature and literary analysis. Topics vary.

490R. Seminar in Comparative Literature. (3:0:0 ea.)
Reading, analysis, and presentation of papers concerning topics in comparative literature. Topics vary.

595R. Directed Readings. (1-3:Arr.:Arr. ea.)
For undergraduate or graduate majors only. Arranged with department chairman.

610. Methods of Study in Comparative Literature. (3:3:0) Prerequisite: graduate standing.
Relationships among literatures and analysis of types, genres, styles, etc.; definition of movements and periods.

620R. Studies in Periods and Movements. (3:3:0 ea.) Prerequisite: prior or concurrent enrollment in CompLit. 610 or consent of instructor.
Topic varies.

630R. Studies in Literary Genres. (3:3:0 ea.) Prerequisite: prior or concurrent enrollment in CompLit. 610 or consent of instructor.
Topic varies.

690R. Seminar in Comparative Literature. (3:0:0 ea.) Prerequisite: CompLit. 610 or consent of instructor.
Problems in comparative literature. Course content varies from semester to semester.

699R. Master's Thesis. (6-9:Arr.:0 ea.)

Indian Education

Associate Professors: DeHoyos, Garbe, Gowans, Osborne.
Assistant Professors: Banks, Bennion, Black, Chamberlain, Fox, Harmon, Lofgreen, Maestas (Chairman, 115 BRMB), Pope, Rainer, Rigby, Sumpter, Westover.

Indian Education

This department exists to prepare Indian students and other minorities with U.S. citizenship to succeed in college work and to make meaningful contributions to society.

Freshman Indian and other minority students register in the Department of Indian Education upon admission to the University; later, they transfer to any of the degree programs available in the University's various colleges.

Services of the Department

The department is divided into three main areas which serve the student: Indian Student Activities, Indian Personal Services, and Indian Academic Services.

Indian Student Activities

The Indian student organization, the Tribe of Many Feathers, coordinates many of the Indian student activities both on and off campus. In addition, the Student Activities area sponsors important creative and service projects in which Indian students may engage. In these ways, students enjoy extracurricular learning opportunities which help to prepare them for future leadership.

Indian Personal Services

Indian Personal Services (160 BRMB) offers all minority students with U.S. citizenship career, academic, and personal counseling; financial aid assistance; and tutoring.

Academic Services.

In the Academic Services area, faculty members teach sections of courses in which Indian students, as well as others, enroll. Most of these courses are not located in the department: Indian students take regular University courses. However, the faculty members in the department who teach sections which include Indian students are especially well equipped to help these students bridge the differences between their various cultural backgrounds and the academic style of the university.

Detailed information concerning the courses which are recommended for incoming freshman and transfer

Indian students is made available to these students upon admission.

The following list of courses includes Indian Education courses and courses having sections taught by the Indian Education faculty in which it is especially advantageous for Indian students to enroll.

Courses

☐ **Chemistry 100. Elementary College Chemistry.** (3:3:0)

☐ **Mathematics 100. Elementary Mathematics.** (1:0:5)

☐ **Physical Science 100. Fundamentals in Physics.** (3:3:0)

101. Introduction to Indian America. (3:3:0)
Modular course surveying historical and contemporary Indian America: history, culture, language, literature, art, music, education, and current problems.

☐ **Business Education 101. Beginning Typewriting.** (2:3:2)

☐ **Geology 101. Introduction to Geology.** (3:2:2)

☐ **Zoology 101. Introduction to Biological Science.** (3:3:3) (G-BS)

☐ **Geology 102. Introduction to Geology Laboratory.** (1:0:2)

☐ **ESL 104. English as a Second Language (Reading).** (4:3:2)

☐ **English 105. Basic Writing Review. (2:2:1)**

107. Contemporary Issues in Indian Affairs. (3:3:0) (G-SS)
Historical and contemporary evaluation of Indian movements and Indian legislation on the national, state, and tribal levels.

☐ **English 107. Basic Reading Review.** (2:2:1)

☐ **General Studies. 110. Effective Study and Adjustment to College.** (1:2:0)

111. Indian Arts and Crafts. (2:2:0)
Introduction to the living arts of Indian cultures, including silversmithing, pottery making, weaving, benching, painting, and basket making.

☐ **Business Education 111. Elementary Shorthand.** (4:5:1)

☐ **Sociology 111. Introductory Sociology.** (3.3:0)

☐ **Business Education 112. Intermediate Shorthand.** (3:5:1)

☐ **Sociology 112. Modern Social Problems.** (3.3:0)

☐ **English 115. College Reading and Writing.** (4:4:1)

☐ **General Studies 121. College Developmental Reading.** (1:1:1)

☐ **Mathematics 121. Technical Mathematics.** (3:2:3)

☐ **Religion 121, 122. Introduction to the Book of Mormon.** (2:2.1 ea.)

☐ **Business Education 203. Speedbuilding in Production Typewriting.** (2:3:2)

201. Music of Indian America. (2:2:0)
Understanding the general characteristics of Indian music and analyzing Indian songs.

202R. Music Lab. (2:0:2)
Applying the fundamental concepts of melody, rhythm, form, styles, and scales basic to Indian music.

☐ **Business Education 203. Production Typing.** (2.5:0)

☐ **Religion 211, 212. The New Testament.** (2:2:0 ea.)

☐ **Sociology 223. Racial and Minority-Group Relations.** (3:3.0)

☐ **Religion 231, 232. The Gospel in Principle and Practice.** (2:2:0 ea.)

☐ **English 250R. Literature (Indian in Literature).** (3:3:0)

☐ **Religion 261. Introduction to Genealogy.** (2:2:0)

☐ **University Studies 300R. Independent Group Studies.** (Arr.)

☐ **Mathematics 305. Basic Concepts of Mathematics.** (3:3:0)

☐ **Mathematics 306. Concepts of Mathematics.** (3:3:0)

307. Contemporary Issues in Indian America. (3:3:0) (G-SS) Prerequisite: AmInd. 107 or consent of instructor.
Research in historical and contemporary problems facing urban and reservation Indians; government agencies dealing with Indians.

☐ **English 312. Critical and Interpretive Writing.** (3:0:3)

☐ **English 315. Exposition and Report Writing.** (3:3:0)

☐ **Political Science 319R. Topics in American Government and Politics.** (3:3:0 ea.)

323. Introduction to Indian Education. (3:3:0)
Provides sufficient background for teachers of Indian students to understand learning difficulties of language and culture and to become aware of government title programs.

☐ **Religion 341. Latter-day Saint Church History to 1846.** (2:2:0)

☐ **Religion 342. Latter-day Saint Church History after 1846.** (2:2:0)

☐ **Zoology 355. Sociobiology.** (3:3:0)

401. Indian Oral Tradition. (3:3:0)
History and use of language among American Indians; oral tradition of legends, myths, and oratory; impact of Indian languages today.

445. Contemporary Native American Address. (3:3:0)
Native American orators in both historical and contemporary contexts, emphasizing styles, central themes, and common analogies.

☐ **History 462. American Westward Movement to 1825.** (2:2:0)

☐ **History 463. American Westward Movement after 1825.** (2:2:0)

498R. Directed Readings. (1-2:0:0) Prerequisites: AmInd. 101, 107, and 323.
Directed readings in Native American Studies minor.

Native American Studies Minor

Coordinator: Fred R. Gowans (172 BRMB).

Undergraduate Program

Many Indian and non-Indian students graduating from Brigham Young University in studies such as education, sociology, business, and political science will be brought into contact with the native American people because of the nature of their occupations.

The native American studies minor is designed to augment and supplement students of various disciplines so that they may become more culturally aware of the heritage of the American Indian, thus promoting better understanding and cooperation.

The minor has been designed so that the student may select classes from a variety of interdepartmental courses if desiring a general background, or a combination of classes can be selected for an in-depth study in a specific discipline.

Students may make application or obtain further information by contacting the coordinator.

Requirements

A total of 18 hours (in addition to a regular major) divided as follows:

1. Core courses: Indian Ed. 101, 107, 323 .... 9 hours
2. Elective courses chosen from the following departments .... 9 hours

List of Courses

Agricultural Economics
355 (3) Rural Development Economics

Anthropology
317 (3) Native People of North America
320 (2) The North American Indian Today

Art and Design
105 (2) Ceramics for Nonmajors

Archaeology
415 (3) Southwestern Archaeology

Clothing and Textiles
221 (2) Weaving

Education (Secondary)
376R (1) Self-Concept Development
376R (1) Adapting Instruction for Culturally Different Students

English
250R (3) The American Indian in American Literature

History
457 (3) The Indian in Latin American History
460 (3) The Hispanic Southwest
462 (2) American Westward Movement to 1825
463 (2) American Westward Movement after 1825
469 (2) The Indian in American History

Indian Education
101 (3) Introduction to Indian America
107 (3) Contemporary Issues in Indian Affairs
111 (3) Indian Arts and Crafts
201 (2) Music of Indian America
202R (1 ea.) Music Laboratory—only 2 hours of credit applicable toward degree
307 (3) Contemporary Issues in Indian America
323 (3) Introduction to Indian Education
401 (3) Indian Oral Tradition
445 (3) Contemporary Native American Address
498R (1-2) Directed Readings

Linguistics
101 (4) First-Year Navajo
102 (4) First-Year Navajo
201 (3) Navajo: Language and Culture
301 (3) Advanced Navajo
301R (4 ea.) Audio-Lingual Study of an Uncommon Language
302R (4 ea.) Audio-Lingual Study of an Uncommon Language

Political Science
319R (3 ea.) Indian Tribal Government

Religion
261 (2) Introduction to Genealogy [Native American]

Sociology
223 (3) Racial and Minority Group Relations.

Industrial Education

Professors: Grover (Chairman, 230 SNLB), Hinckley, McArthur, McKell, Nish.
Associate Professors: Jenkins, McKinnon.
Assistant Professors: Gonzales, Hill, Shepherd.

The Industrial Education Department provides the following major areas of instruction:

1. **Industrial Arts Teacher Education,** offering instruction leading to the baccalaureate degree to prepare industrial arts teachers for junior and senior high schools. Courses are available to elementary teachers in industrial arts and career education.
2. **Technical Teacher Education,** offering instruction leading to the baccalaureate degree to prepare teachers primarily for vocational and technical schools.
3. **Vocational Education,** offering instruction leading to a baccalaureate degree to prepare teachers for state trade and industrial certification.
4. **Graduate Program,** leading to the Master of Science or the Master of Industrial Education degree, designed to prepare master teachers, supervisors, and coordinators of industrial and technical education.
   Note: In cooperation with the College of Education, the Doctor of Education degree is available, with minor emphasis in industrial education.
5. **The General Service Courses,** open to all students. These courses offer basic experiences in fundamental operations and processes and are designed to give exploration, guidance, and consumer knowledge of modern industry and crafts.

Undergraduate Program

Students are encouraged to seek early advisement from the department concerning the major program. Students should take courses in this major concurrently with the general education requirements to provide a smooth functioning of the program. Students beginning their professional preparation in the junior or senior year may find it necessary to devote additional time for completion of the program, since they usually will not have taken the technical laboratory courses in the depth areas of the curriculum.

General Education Requirements

Students should understand that general education requirements (including religion) are in addition to the course requirements shown in the typical program. Students are urged to obtain a complete integrated course program from their department office.

Educational Requirements for Certification

Refer to the Education section for industrial education certification standards.

Note: Consult with your adviser before registering for SecEd. 376R or 476.

Students must not assume that completion of the requirements for graduation will mean that they have completed certification requirements. It is the students' responsibility to keep the TCO informed, through their adviser, of their progress toward certification.

No D credit in your major will be accepted.

Industrial Arts Teacher Education

This program is designed to prepare teachers for elementary, junior high, high, and post-high-school industrial education positions. A student may choose a program for junior high, senior high, or trade and industries preparation. All students must complete the core classes and recommended depth sequence.

Core List: All students must take the following courses: Des. Tech. 111; Indus. 100, 101, 129, 240, 250, and 289.

Technical Depth Area: An additional 23 semester hours must be selected from the following technical areas. Junior high teachers must have classes from a minimum of four areas. Senior high teachers must have a minimum of 6 hours from two areas.

Crafts: Indus. 160, 260, 360, 365, and 490R.
Design Technology: DesTech. 211, 212, 256, 310, 355, 410, and 436.
Electronics: ElecTech. 102, 104, 231, 232, 235, 245, 340, and BldgTech. 341.
Graphic Arts: Indus. 351, 451, 452, 453, and 454.

Metals: Indus. 130, 139, 329; MfgTech. 124, 331, and 335.
Plastics: Indus. 300, 440; MfgTech. 360.
Power-Auto: Indus. 189, 387, 388, 389, 489, and 490R.
Woods: Indus. 105, 200, 210, 300, 315, 319.

Professional Indus.: Indus. 291R, 315, 325, 405, 470, 491R, and 540**

Professional Education: SecEd. 276, 376R, 476; and Health 362.

Suggested Schedule

First Year	**F**	**W**
Math. 100D	2	
Indus. 101		3
Religion	2	2
Indus. 100	3	
PE	.5	.5
DesTech. 111		3
Second Year		
Indus. 289	3	
Indus. 240		3
Indus. 250	3	
SecEd. 276		4
Religion	2	2
Psych. 111	3	
SecEd. 376R		2
Indus. 129	3	
Third Year		
Technical depth	6	9
Religion	2	2
SecEd. 376R		3
Engl. 316	3	
Fourth Year		
Technical depth		12
SecEd. 476	14	
Indus. 405	2	
Indus. 470	2	
Indus. 540		2

Vocational Education

The curriculum is designed to prepare skilled craftsmen for trade and industrial programs. Admission to the program requires approval of the department and an approved program developed by the student and the department.

Technical Teacher Education

This curriculum is designed to prepare teachers for technical and industrial programs in high and post-high-school institutions. Admittance to the program requires approval of the department, a minimum GPA of 2.25, and the Associate of Science degree in a technical area or completion of the courses for the associate degree.

Core List: Indus. 100, 101, 129, 240, 250, 289, and DesTech. 111.

Technical Area: An associate degree or an approved program for an associate degree in a technical area. Additional courses must be selected from the technical depth area. The core class in the technical area may be deleted, allowing a total of 30 semester hours for the technical area and 18 semester hours for the core area.

Professional Industrial Education: Indus. 291R, 405, 470, 491R, and 540**

Professional Education: SecEd. 276, 376R, 476; and Health 362.

**May receive graduate credit if approved to be taken last semester.

Graduate Program

Application Consideration Dates and Entry Times. Same as the Graduate School schedule.

Programs. Master of Science (M.S.), Master of Industrial Education (MIE), Doctor of Education (Ed.D.), minor.

These programs are designed to meet the needs of industry and education. They provide specialization for management, supervision, and training in industry. They also provide preparation for master teachers, supervisors, and coordinators of industrial education.

Master of Industrial Education

Prerequisites. A valid industrial education teaching certificate and a minimum of one year's teaching experience in industrial education.

Field. Industrial education.

Minors Permissible (9-10 semester hours). Art, instructional science, educational psychology, special education, guidance and counseling, junior college curriculum, educational supervision and administration, community school, others with departmental approval; Option 2.

Requirements. Minimum of 33 semester hours, including a field project.

Required Courses. Indus. 615, 625, 645, 690R, 694R, 698, EdPsy. 501; and a minimum of 6 semester hours selected from graduate industrial and technical education courses.

Master of Science

Prerequisites. 30 semester hours in acceptable industrial and technical undergraduate courses; or a minimum of six years of bona fide trade experience.

Fields. Industrial arts education, technical education, technology, vocational education.

Minors Permissible (9-10 semester hours). Educational psychology, guidance and counseling, instructional science, special education, supervision and administration, community school, junior college curriculum, business management, others with departmental approval; Option 2.

Requirements. Minimum of 27 semester hours plus thesis (6-hr. min.).

Required Courses. InSci. 600 or 660, Stat. 552 or 501, Indus. 615, 690R, 694R (2-hr. min.) 699R, and a minimum of 6 semester hours selected from graduate industrial and technical education courses.

Courses

100. Woodwork Fundamentals. (3:2:4)
Care and use of hand and machine woodworking tools applied to fundamental principles of sawing, joining, fitting, and fastening.

101. Basic Electricity. (3:2:4) (Home Study for nonmajors) Prerequisite: college algebra.
Theory of electricity, including direct and alternating current circuits and magnetism, and basic theory of electron tubes and transistors.

105. Wood Finishing. (2:1:3)
Preparation of surfaces for the application of finishes, stains, paints, varnishes, lacquers, polishes, etc. Use of brush and air gun.

129. Metalwork Fundamentals. (3:2:4)
Metal-working processes, including basic metal forming, cutting, and welding.

130. Introduction to Manufacturing Processes. (3:2:4)
Shaping, forming, and stamping metals.

139. Sheet Metal and Ornamental Iron. (2:1:3)
Processes in sheet metal, ornamental iron work, and pattern layout.

160. Recreational Handicrafts. (2:1:3)
Woodcrafts, metalcrafts, plastics, leather, and electives.

189. Gas and Diesel Engines. (3:2:4)
Care and maintenance, including overhaul and rebuilding procedures.

200. Woodwork Projects. (3:2:4) Prerequisite: Indus. 100.
Advanced woodwork and operations in the construction of furniture; submitting drawings, specifications, and cost estimates for all projects.

210. Carpentry Framing. (3:2:4) Prerequisite: Indus. 100.
Practical problems in forming, framing, sheathing, and insulation.

240. Introductory Plastics Processes. (3:2:4)
Practical shop experience in using production machinery, tools, and materials: wood, metal, and plastics.

250. Graphic Arts (3:2:4)
Beginning course in principles and practices. How each reproduction process fits into the field of visual communications.

260. Crafts 1. (3:2:4)
Fundamental hand and machine operations used in working plastics, wood, and leather.

☐ **SecEd. 276. Exploration of Teaching.** (4:Arr.:Arr.)

289. Power Sources of Industry. (3:2:4)
Development, theory, and application of energy conversion machines.

291R. Seminar. (½:½:0)
Developing leadership training skills and professional growth and development. Required of majors (freshmen, sophomores, and juniors) during each semester of enrollment.

300. New Processes in Wood Technology. (3:2:4) Prerequisite: Indus. 100.
Application of industrial wood processes, including green wood processing, wood laminating, and making silicone rubber molds from wood originals.

315. The World of Construction. (2:1:3)
Developing skills and knowledge necessary to teach basic concepts and skills of the construction industry.

319. Upholstery. (2:1:3)
Experience with typical upholstery systems.

325. The World of Manufacturing. (2:1:3)
Developing skills and knowledge necessary to teach basic concepts and skills of manufacturing industries.

329. Advanced Metal Machining. (3:2:4) Prerequisite: Indus. 130.
Development of operational skills and precision with machining equipment. Introduction to NC and EDM equipment.

351. Typographical Layout and Design. (3:2:4) Prerequisite: Indus. 250.
Principles of design applied to printed products. Arrangement and paste-up of art materials for reproduction. Study of ink, paper, and color theory

360. Crafts 2. (3:2:4)
Processes in metal crafts, textiles, and ceramics.

365. Crafts 3. (2:1:3)
Lapidary and stonesetting

☐ **SecEd. 376R. Theory and Methods of Secondary Teaching.** (1-2 Arr.:Arr. ea.)

377. Secondary Teaching and Curriculum Methods. (3:3:0) Prerequisite: SecEd. 276.
Classroom procedures applied to individual and group instruction in industrial and technical education.

387. Steering and Braking Mechanisms. (3:2:4)
Theory and application of the principles of alignment, brakes, steering, and suspension systems on the modern automobile.

388. Power Transmission. (3:2:4)
Theory and application of the principles of standard transmissions, differentials, and automatic transmissions (light duty).

389. Fuel and Electrical Systems. (3:2:4)
Principles, design, and application of various types of fuel and electrical systems used on highway vehicles, including use of tune-up instruments.

399R. Cooperative Education: Industrial Education. (0-6:0:Arr.) Prerequisite: prior departmental approval.
On-the-job experience.

405. Shop Maintenance. (2:1:3)
Care and maintenance of tools and machines.

440. Industrial Plastics. (3:2:4) Prerequisite: Indus. 100 or 130.
Processes and materials used in laminating, molding, extruding, casting, and thermoforming.

451. Photoetching. (3:2:4) Prerequisite: Indus. 250.
Materials and procedures in the production of photoengraving; photofabrication, stereotyping, printed circuits; photo, mechanical etchings on brass, copper, and zinc.

452. Advanced Letterpress. (2:1:3) Prerequisite: Indus. 250.
Imposition and lockup, platen press operation, makeready, paper cutting, die cutting, scoring, embossing and perforating, and operation of bindery equipment.

453. Photolithography. (3:2:4) Prerequisite: Indus. 250.
Process camera work, stripping procedures, surface platemaking for offset lithography, and color separation techniques with densitometer.

454. Photo-Screen Process Printing. (3:2:4) Prerequisite: Indus. 250.
Specialized photographic techniques, methods, and materials used in producing screen-process stencils, including photocomposition of type.

470. Shop Organization and Management. (2:2:2)
Organizational management of industrial education labs, including unit, general, and multiple activity types.

☐ **SecEd. 476. Secondary Teacher Education.** (8-21:Arr.:Arr.)

479. Secondary Student Teaching in Industrial Education. (2-8:1:40)

489. Power Tune-Up. (2:1:4) Prerequisite: Indus. 389.
Theory and application of balancing the ignition and fuel systems to decrease emissions and improve performance of automotive engines utilizing a chassis dynamometer.

490R. Advanced Topics in Industrial Education. (1-3:Arr.:Arr. ea.) Topics must be approved by program supervisor.
Individual study in special areas of interest (3-hour maximum for any one area).

491R. Seminar. (½:½:0 ea.)
Developing leadership training skills and professional growth and development. Required of seniors.

505. Industrial Arts for Elementary Teachers. (2:2:0)
Nature and needs of industrial arts teachers in the elementary schools, emphasizing content and procedures.

535. Industrial Education Safety and Liability. (2:2:0)
Accident causes and prevention in industrial education laboratories; teacher and student liability; present laws affecting school safety.

540. Industrial Occupational Information and Guidance. (2:2:0)
Current industrial and technological advances related to industrial occupations and career education.

593R. Workshop in Industrial Education. (1-3:Arr.:Arr ea.)
Current industrial and technological advances.

610. History and Trends in Industrial and Technical Education. (2:2:0)
Historical developments from their early beginnings to the present.

615. Principles and Objectives of Industrial and Technical Education. (2:2:0)
Philosophical background for industrial arts and vocational and technical electives.

625. Course Construction in Industrial and Technical Education. (2:2:0)
Analyzing an occupation, developing objectives, and individualizing a course unit.

630. Problems of Adult Industrial Education. (2:2:0)
Development of the adult industrial education movement; its relative problems, emphasizing continuing education.

635. Planning and Equipping Industrial and Technical Programs. (2:2:0)
Facilitating supervised instruction in industrial arts, vocational education, and technical education laboratories.

640. Coordination and Supervision of Industrial and Technical Education. (2:2:0)
Methods, as well as laws, regulations, and policies.

645. Visual and Graphic Materials in Industrial Education. (2:1:2) Prerequisite: Indus. 625.
Basis for the selection, development, and use of visual and graphic materials and their contribution to industrial and technical education.

690R. Seminar. (1:1:0 ea.)
Review of latest developments and research findings in the field of industrial and technical education.

694R. Readings and Conference. (1-3:0:0 ea.)
Limited to a maximum of 6 credit hours.

695R. Problems in Industrial and Technical Education. (1-3:0:0 ea.)
Limited to a maximum of 6 credit hours.

698R. Field Project. (2-4:Arr.:Arr.)

699R. Thesis for Master's Degree. (6-9:Arr.:Arr. ea.)

Institute of Government Service (Master of Public Administration)

For information concerning faculty, course work, and other requirements, refer to the *Graduate School of Management Bulletin*. See Graduate School of Management, Courses for Master of Public Administration, for MPA courses.

Interior Environment

Assistant Professors: Dansie, Sipherd (Chairman, 233 BRMB).
Instructors: Allen, Gustafson, Heaton, D. Kinateder, R. Kinateder, Mead, Nielson, Olauson, Riggs, Smart, Stimpson, Taylor, Viehweg, West, Wymore.

Undergraduate Program

The Department of Interior Environment, as part of the College of Family Living, is dedicated to helping create homes that are fully responsive to the finest expressions of family life. In order to accomplish this, the department offers courses that are open to all students in the University and provides a curriculum designed to prepare majors for professional competency. The curriculum has been prepared with three objectives in mind:

1. To prepare each student to create, with competence, interior home environments in which family members may live and function at their highest level. To accomplish this objective, the department strives to—

   a. develop sensitivity in planning various aspects of the home, providing function, economy, character, and beauty, to fit the life-style needs of the family unit.

   b. help the student get the maximum value in the complete design of the home with the minimum expenditure.

   c. instill in the student a broad understanding of the total interior environment and its importance in the psychological growth and development of the individual.
2. To provide the background to enter a graduate program in interior design, architecture, and related fields.
3. To give the student, through academic and practical training, an adequate background to qualify for employment in the field of interior design. With adequate qualifications and apprenticeship, status as a professional designer may be earned.

Semester Abroad

The Department of Interior Environment will be participating in Semester Abroad—London. Students may earn credit in interior environment, humanities, and other fields. There will be firsthand study of architecture, furniture, and the decorative arts in cottages, castles, and museums in Europe. The department also offers study tours to Europe, the East Coast, the West Coast, and the South.

ASID

Through meetings, lectures, field trips, and other group involvement, the student chapter of the American Society of Interior Designers in the department affords students valuable experiences and professional practice in interior design. Student membership in ASID and the interior environment four-year degree program permit the graduate to be an associate professional member of ASID.

Major Requirements

Students majoring in interior environment are required to complete a minimum of 40 hours in the department and 20 hours outside the department, including IntEnv. 237, 238R, 240, 330, 331, 340, 350, 360, 440, 460, 480, and 499R; ArtDs. 102, 312, 412; Des. Tech. 104; Clo. and Text. 260, and FEHM 330.

Courses related to interior environment and of value to the major in the department, although not required, include Hum. 101, Phil. 110, Physics 137 and 177, Bot. 250, FEHM 335 and 336, Int. Env. 425 and 430, Clo. and Text. 430, and Ind. Ed. 105 and 319.

Minor Requirements

A minor in interior environment may be obtained upon completion of the following 15 credit hours: Int. Env 240, 330, 331, 340, and 425. Other courses may be substituted with the approval of the department chairman.

Suggested Four-Year Sequence of Courses

Freshman	**Hours**
DesTech. 104, 237	5
IntEnv. 240	3
ArtDs. 102	2
Sophomore	**Hours**
CloTx. 260	3
ArtDs. 312	3
IntEnv 238R, 350	6
Junior	**Hours**
IntEnv 330, 331, 340, 360	12
Senior	**Hours**
ArtDs. 412	2
IntEnv. 425, 440, 460, 480, 499R	15

Courses

237. Rendering 1. (3:2:4) Prerequisite: ArtDs. 102.
Methods of interior presentation, emphasizing drawing

techniques, use of pencil, ink-line markers, and pastels in rendering.

238R. Rendering 2. (3:2:4) Prerequisite: IntEnv. 237.
Continuation of IntEnv. 237, emphasizing quality and professionalism.

240. Introduction to Interior Environment. (3:3:0) Home Study also. (G-HA)
Tastefully planning and decorating the home, emphasizing the use of color and fabric.

330. Survey of Historical Furnishings. (3:3:0) Home Study also. (G-HA) Prerequisites: IntEnv. 240, CloTx. 260, ArtDs. 312.
Residential architecture, furniture, and the decorative arts from ancient times to 1900 and their relevance to today's interiors.

331. Contemporary Furnishings. (3:3:0) Home Study also. (G-HA) Prerequisite: IntEnv. 330.
Residential architecture, furniture, and the decorative arts since 1900, emphasizing the modern interior.

340. Materials and Components of the Interior. (3:3:0) Prerequisite: IntEnv. 240.
Specific ingredients of the interior environment, emphasizing construction and use.

350. Residential Space Planning. (3:2:4) Prerequisites: IntEnv. 237, 238, 240.
Laboratory exercises in planning, design, and layout of residential spaces, emphasizing traffic flow, pattern and texture, lighting techniques, and use of materials and their practical relationships.

360. Interior Planning Laboratory 1. (3:2:3) Prerequisites: all interior environment requirements through 340.
Studio class with lectures and supervised exercises applying principles and elements of design in planning complete interiors.

425. Textiles for the Interior. (3:2:2) Prerequisites: IntEnv. 240, CloTx. 260.
Fundamentals of silkscreening, batik, macrame, blockprinting, tie-dyeing, and stitchery, emphasizing their use in the home.

430. Advanced History of Residential Interior Architecture and Furnishings. (3:3:0) (G-HA) Prerequisites: IntEnv. 330, 331.
Research in the study of residential architecture, furniture, and the decorative arts, both historic and contemporary.

440. Work Procedures and Professional Practices. (3:3:0) Prerequisites: all interior environment requirements through 360.
Business aspects of the interior design profession aimed at assisting both the designer and consumer.

460. Interior Planning Laboratory 2. (3:2:3) Prerequisite: IntEnv. 360.
Advanced practices in planning the interior.

480. Senior Field Work. (3:2:4) Prerequisites: all interior environment requirements through 460.
The business of interior design through apprenticeship in retail establishments, and working directly with clients.

499R. Senior Project. (1-6:Arr.:Arr. ea.) Prerequisites: all interior environment requirements through 480.

International Relations

See World Affairs, International Relations.

Institute of Professional Accountancy

See Accounting and Graduate School of Management, Courses for Master of Accountancy

Languages

Undergraduate Program

Foreign Language Study. The study of a foreign language is a unique educational experience. It is a means by which students can participate in the inner life of another people and share their culture. Through the study of a foreign language, students also come to learn their own language better. The poet and philosopher Goethe said, "He who knows no other language, knows not his own."

The objectives of the courses in the language departments are as follows:

1. General: To teach students to understand and to speak a language with facility and to develop skill in reading and writing. To provide a survey of foreign literatures and to acquaint students with foreign cultures.

2. Specific: To prepare students for the teaching profession, government work at home and abroad, international trade, LDS missions in foreign countries, and research leading to advanced degrees.

Language Requirement for Graduation and Information for High School Graduates. Successful completion of a 201 language class or a more advanced class will fulfill the former GE language requirement for graduation. High school graduates who have had two years of foreign language study may enroll in a 201 course in the language studied, or they may choose to begin with a 102 course. Those who have had one year of foreign language study in high school may enroll for a 102 course. Language courses through 201 will prepare students for a general education evaluation under Category III, which is required of students entering the University as of Fall Semester 1976. For further information or consultation, see individual placement advisers for the language departments.

Library and Laboratory Facilities. The language departments have fine library facilities and language laboratories permitting emphasis on the most modern language-teaching techniques. The tape libraries contain some of the best dramatic and poetic works in the principal languages of the world.

Credit for Foreign Residence. Students who have had foreign residence may, with the consent of the language departments concerned, obtain a maximum of 12 to 16 hours of special foreign language credit. This may be done by successfully completing a more advanced course in the language and by passing an examination administered by the department. Credit may be granted by examination only in exotic languages in which no advanced courses are offered. The credit is available upon payment of a special fee. Foreign students are not permitted to obtain credit in this way for their native language, but may take special examinations in English as a Second Language to qualify for ESL credit.

Major and Minor Requirements. Courses which fulfill the requirements for an undergraduate major or minor are listed under each separate language offering. Areas that generally serve as minors include second foreign languages, English, linguistics, humanities, one of the social sciences, or one of the fine arts.

Graduate Program

Laboratory Assistantships. Well-qualified undergraduate majors may apply for laboratory assistantships. Priority will be given to those who have completed the 326 and 377 courses in their language specialties.

Prospective Graduate Students. A reading knowledge of a second language is required of M.A. candidates. It is advisable to begin work on a second language no later than the junior year.

Graduate Assistantships. Graduate assistantships are available to language graduates whose undergraduate records, especially in languages, are unusually good. Applicants for assistantships must have an overall GPA of 3.0 or better and must have completed the following language courses: 326 (Phonetics and Pronunciation) and 377 (Secondary Teaching Procedures). The deadline for application is March 1.

Asian and Slavic Languages

Professors: Gubler, Rogers.
Associate Professors: Browning, Jarvis (Chairman, 249 FB), Williams.
Assistant Professors: Beaman, Durrant, Lee, Perkins.
Instructor: Watabe.

Undergraduate Program

The Department of Asian and Slavic Languages offers the Bachelor of Arts degree in Chinese, Japanese, and Russian. Instruction is regularly available in the following languages:

Chinese (Mandarin)
Japanese
Korean
Russian
Thai

Credit by examination is available for many lower-division courses of the above-listed languages. Enrollment in an advanced class is a prerequisite to taking the examination.

The following languages are **not** taught on a regular basis but may be offered if sufficient demand exists. Credit by examination is available for all the languages listed below.

Asian Languages

Cantonese
Vietnamese

Austronesian Languages

Fijian
Indonesian
Maori
Niuean
Samoan
Tagalog
Tahitian
Tongan

Slavic Languages

Polish
Serbo-Croatian

Asian Languages

Asian Languages Course

490R. Individual Study in Asian Literature. (1-3:Arr.:Arr. ea.) Prerequisite: lower-division courses, mission, or commensurate experience.

Assignments to fit individual needs of advanced students. By permission only.

Cantonese Courses

101A,B. First-Year Cantonese. (2:3:0 ea.)

Basic language skills.

102. First-Year Cantonese. (4:4:0) Prerequisite: Cantonese 101.

Basic language skills.

211. Second-Year Conversation. (2:2:0) Prerequisite: Cantonese 201 or foreign residence experience.

Intermediate listening comprehension and speaking skills.

311. Third-Year Conversation. (2:2:0) Prerequisite: Cantonese 211 or foreign residence experience.

Advanced conversational skills.

Chinese

Credit by Examination. Former missionaries from a Chinese-speaking mission (Taiwan, Hong Kong, etc.) and others with equivalent residence experience (excluding those whose native language is Chinese) are eligible for several hours of Chinese language credit by a written examination. Enrollment in one of the following classes is a prerequisite to taking the examination: Mandarin credit—Chinese 201 (or higher); Cantonese credit—Chinese 102. The examination must be taken when it is given by the Chinese staff (usually at the first part of the semester) during the first class you take in the program, and the examination may be taken only once. Students may receive from 8 to 14 credit hours, depending on which class they take and how well they do in the written examination. Applications and information on both examinations (Mandarin and Cantonese) are available in the department office.

Chinese Major: 301, and an additional 22 hours of upper-division Chinese beyond 301—which must include 321 (or 322), 342R, 441, 442, 443 (or 444), and 495. No D credit will be accepted as part of the major requirement. No formal minor is required of Chinese majors, but it is required that students counsel with their advisers early in their programs to determine supporting courses appropriate to their professional goals.

Chinese Minor: 301, 321 (or 322), 342R, 441, 443, and one additional class above 301.

Courses

101, 102. First-Year Mandarin. (4:4:2 ea.) Prerequisites: for 102, Chinese 101 and consent of instructor.

For those who have had no Chinese. Pronunciation, fundamentals of grammar. Chinese characters recognition (101) and writing (102). Emphasizes conversation and vocabulary building.

201. Intermediate Modern Chinese 1. (4:4:1) Prerequisite: Chinese 102 or consent of instructor.

Reading, conversation, vocabulary building, emphasizing writing of characters.

211. Second-Year Conversation. (2:2:1) Prerequisite. Chinese 102 or consent of instructor.

301. Intermediate Modern Chinese 2. (4:4:0) Prerequisite: Chinese 201 or consent of instructor.

311R. Third-Year Conversation. (2:2:0) Prerequisite: Chinese 211 or consent of instructor.

To be taken concurrently with Chinese 321 and 322. Emphasizes advanced conversation.

321, 322. Selected Readings and Composition. (3:3:0 ea.) Prerequisite: Chinese 301 or consent of instructor.

Introductory readings in modern Chinese, emphasizing the writing of analytical papers.

342R. Chinese Literature in Translation. (3:3:0 ea.) (G-HA)

440R. Standard Works in Chinese Translation. (3:0:0) Prerequisite: Chinese 301 or consent of instructor.

Readings from the standard works with careful consideration of language and cultural problems inherent in the translation of Church materials.

441, 442. Classical and Documentary Chinese. (4:5:0 ea.) Prerequisite: Chinese 301 or consent of instructor.

Intensive reading and interpretation of documentary texts; introduction to syntax and stylistic patterns of documentary Chinese.

443. Modern Chinese Literature. (4:4:0) (G-HA) Prerequisite: Chinese 301 or consent of instructor.

Complements overall language competency through reading modern texts selected from a wide range of styles and genres.

444. Readings in Chinese Social Sciences. (4:4:0) Prerequisite: Chinese 301.

Extensive reading of modern Chinese writings in history and the social sciences.

445. Chinese Culture. (3:3:0) (G-HA) Prerequisite: consent of instructor.

Introduction to the institutions, culture, and fine arts of China. Works may be read in English.

490R. Individual Study in Chinese. (1-3:Arr.:0 ea.) Prerequisite: Chinese 322 or consent of instructor.
Assignments to fit individual needs of the advanced student.

492R. Student Journal in Chinese. (2:2:0)

495. Senior Seminar for Majors. (2:2:0) Prerequisite: at least 6 hours of Chinese literature.

521R. Seminar in Chinese Literature for Asian Specialists. (3:3:0 ea.) Prerequisite: graduate standing.
Advanced reading and interpretation of Chinese literary texts for Asian Studies majors.

590R. Individual Study in Chinese. (1-3:0:0 ea.) Prerequisite: graduate standing.
Assignments to fit individual needs of the advanced student.

Japanese

A major in Japanese requires at least 32 hours beyond the first-year courses as follows: Japanese 201, 211, 301, 311, 321, 322, 343R, 443, 444, 445, and 495. The requirement for a departmental minor in Japanese totals 17 hours beyond Japanese 201. Early in their programs, students must consult with a faculty member in the department to define their programs.

Courses

101, 102. First-Year Japanese. (4:4:1 ea.) Prerequisite: for 102, Japanese 101 or consent of instructor.
Writing systems, grammar and vocabulary-building fundamentals, and easy conversation and composition.

201. Second-Year Japanese. (4:4:2) Prerequisite: Japanese 102 or consent of instructor.
Reading texts representative of various modern written styles. Further practice in composition, conversation, and grammar.

211. Second-Year Conversation. (2:2:0) Prerequisite: Japanese 102 or consent of instructor.

301. Introduction to Japanese Literature. (4:4:0) (G-HA) Prerequisite: Japanese 201 or consent of instructor.

311. Third-Year Conversation. (2:2:0) Prerequisite. Japanese 301 or consent of instructor.

321. Selected Readings and Composition. (3:3:0) Prerequisite: Japanese 301 or consent of instructor.
Introductory readings in modern literary Japanese, emphasizing the writing of analytical papers.

322. Selected Readings and Composition. (3:3:0) Prerequisite: Japanese 321 or consent of instructor.
Study of scholarly writings in Japanese.

343R. (Japanese-CompLit.) Japanese Literature in Translation. (3:3:0 ea.) (G-HA)
Reading and discussion of Japanese literature in translation. Topics vary.

443. Modern Japanese Literature. (3:3:0) Prerequisites: Japanese 321 and 322.
Historical survey of the modernization of prose, 1868-1940.

444. Modern Japanese Literature. (3:3:0) Prerequisite: Japanese 322 or consent of instructor.
Historical survey of the modernization of poetry and drama from the nineteenth century to the present.

445. Japanese Culture. (3:3:0) (G-HA)
A study of aspects of culture, the visual arts, and religious and philosophical thought that produce the unique Japanese character. Works may be read in English.

490R. Individual Study in Japanese. (1-3:Arr.:0 ea.) Prerequisite: limited to those with advanced status.
Assignments to fit individual needs of the advanced student.

495. Senior Seminar for Majors. (2:2:0) Prerequisites: all 300-level courses required for major.
Applying research methods in Japanese sources and bibliographic practice to a project appropriate to the student's specialization.

521R. Seminar in Japanese Literature for Asian Specialists. (3:3:0 ea.) Prerequisite: graduate standing.
Advanced reading and interpretation of Japanese literature texts for Asian studies majors.

522R. Seminar for Study of Japanese Texts, Historical and Modern. (3:3:0 ea.) Prerequisite: graduate standing.
Reading and discussion of classical or modern texts in philosophy, history, social sciences, or linguistics.

590R. Individual Study in Japanese. (1-3:0:0 ea.) Prerequisite: graduate standing.
Assignments to fit individual needs of the advanced student.

Korean Courses

101A,B. First-Year Korean. (2:3:0 ea)
Basic language skills.

102. First-Year Korean. (4:4:0) Prerequisite: Korean 101.
Basic language skills.

201. Second-Year Korean. (4:4:0) Prerequisites: Korean 101 and 102 or foreign residence experience.
Conversation, vocabulary building, and reading and writing skills, emphasizing reading.

211. Second-Year Conversation. (2:2:0) Prerequisite: Korean 201 or foreign residence experience.
Intermediate listening comprehension and speaking skills.

301. Introduction to Korean Literature. (4:5:0)

311. Third-Year Conversation. (2:2:0) Prerequisite: Korean 211 or foreign residence experience.
Advanced conversational skills.

340. Introduction to Korean Literature. (4:0:0) (G-HA) Prerequisite: foreign residence experience or consent of instructor.
Readings from the best Korean literature; basic literary concepts.

Thai Courses

101A,B. First-Year Thai. (2:3:0 ea.)
Basic language skills.

102. First-Year Thai. (4:4:0) Prerequisite: Thai 101.
Basic language skills.

201. Second-Year Thai. (4:0:0) Prerequisites: Thai 101 and 102 or foreign residence experience.
Conversation, vocabulary building, and reading and writing skills, emphasizing reading.

211. Second-Year Conversation. (2:2:0) Prerequisite: Thai 201 or foreign residence experience.
Intermediate listening comprehension and speaking skills.

301. Intermediate Modern Thai. (4:4:0) Prerequisite: Thai 201 or foreign residence experience.

311. Third-Year Conversation. (2:2:0) Prerequisite: Thai 211 or foreign residence experience.
Advanced conversational skills.

Vietnamese Courses

101A,B. First-Year Vietnamese. (2:3:0 ea.)
Basic language skills.

102. First-Year Vietnamese. (4:4:0) Prerequisite: Vietnamese 101.
Basic language skills.

201. Second-Year Vietnamese. (4:4:0) Prerequisites: Vietnamese 101 and 102 or foreign residence experience.

Conversation, vocabulary building, and reading and writing skills, emphasizing reading.

211. Second-Year Conversation. (2:2:0) Prerequisite: Vietnamese 201 or foreign residence experience.
Intermediate listening comprehension and speaking skills.

311. Third-Year Conversation. (2:2:0) Prerequisite: Vietnamese 211 or foreign residence experience.
Advanced conversational skills.

Austronesian Languages

Fijian Courses

101. First-Year Fijian. (4:4:0 ea.)
Basic language skills

101,102. First-Year Fijian. (4:4:0 ea.)
Basic language skills.

201. Second-Year Fijian. (4:4:0) Prerequisites: Fijian 101 and 102 or equivalent experience.
Conversation, vocabulary building, and reading and writing skills, emphasizing reading.

211. Second-Year Conversation. (2:2:0) Prerequisite: Fijian 102 or equivalent experience.
Intermediate listening comprehension and speaking skills.

311. Third-Year Conversation. (2:2:0) Prerequisite: Fijian 211 or equivalent experience.
Advanced conversational skills.

Indonesian Courses

101A,B. First-Year Indonesian. (2:3:0 ea.)
Basic language skills.

102. First-Year Indonesian. (4:4:0) Prerequisite: Indonesian 101.
Basic language skills.

201. Second-Year Indonesian. (4:4:0) Prerequisites: Indonesian 101 and 102 or foreign residence experience.
Conversation, vocabulary building, and reading and writing skills, emphasizing reading.

211. Second-Year Conversation. (2:2:0) Prerequisite: Indonesian 201 or foreign residence experience.
Intermediate listening comprehension and speaking skills.

311. Third-Year Conversation. (2:2:0) Prerequisite: Indonesian 211 or foreign residence experience.
Advanced conversational skills.

Maori Courses

101A,B. First-Year Maori. (2:3:0 ea.)
Basic language skills.

102. First-Year Maori. (4:4:0) Prerequisite: Maori 101.
Basic language skills.

201. Second-Year Maori. (4:4:0) Prerequisites: Maori 101 and 102 or foreign residence experience.
Conversation, vocabulary building, and reading and writing skills, emphasizing reading.

211. Second-Year Conversation. (2:2:0) Prerequisite: Maori 201 or foreign residence experience.
Intermediate listening comprehension and speaking skills.

311. Third-Year Conversation. (2:2:0) Prerequisite: Maori 211 or foreign residence experience.
Advanced conversational skills.

Niuean Courses

101A,B. First-Year Niuean. (2:3:0 ea.)
Basic language skills.

102. First-Year Niuean. (4:4:0) Prerequisites Niuean 101.
Basic language skills.

201. Second-Year Niuean. (4:4:0) Prerequisites: Niuean 101 and 102 or foreign residence experience.
Conversation, vocabulary building, and reading and writing skills, emphasizing reading.

211. Second-Year Conversation. (2:2:0) Prerequisite: Niuean 201 or foreign residence experience.
Intermediate listening comprehension and speaking skills

311. Third-Year Conversation. (2:2:0) Prerequisite Niuean 211 or foreign residence experience.
Advanced conversational skills.

Samoan Courses

101A,B. First-Year Samoan. (2:3:0 ea.)
Basic language skills.

102. First-Year Samoan. (4:4:0) Prerequisite: Samoan 101.
Basic language skills.

201. Second-Year Samoan. (4:4:0) Prerequisites: Samoan 101 and 102 or foreign residence experience.
Conversation, vocabulary building, and reading and writing skills, emphasizing reading.

211. Second-Year Conversation. (2:2:0) Prerequisite: Samoan 201 or foreign residence experience.
Intermediate listening comprehension and speaking skills.

311. Third-Year Conversation. (2:2:0) Prerequisite: Samoan 211 or foreign residence experience.
Advanced conversational skills.

Tagalog Courses

101A,B. First-Year Tagalog. (2:3:0 ea.)
Basic language skills.

102. First-Year Tagalog. (4:4:0) Prerequisite: Tagalog 101.
Basic language skills.

201. Second-Year Tagalog. (4:4:0) Prerequisites: Tagalog 101 and 102 or foreign residence experience.
Conversation, vocabulary building, and reading and writing skills, emphasizing reading

211. Second-Year Conversation. (2:2:0) Prerequisite: Tagalog 201 or foreign residence experience.
Intermediate listening comprehension and speaking skills.

311. Third-Year Conversation. (2:2:0) Prerequisite: Tagalog 211 or foreign residence experience.
Advanced conversational skills.

Tahitian Courses

101A,B. First-Year Tahitian. (2:3:0 ea.)
Basic language skills

102. First-Year Tahitian. (4:4:0) Prerequisite: Tahitian 101.
Basic language skills.

201. Second-Year Tahitian. (4:4:0) Prerequisites: Tahitian 101 and 102 or foreign residence experience.
Conversation, vocabulary building, and reading and writing skills, emphasizing reading

211. Second-Year Conversation. (2:2:0) Prerequisite Tahitian 201 or foreign residence experience
Intermediate listening comprehension and speaking skills

311. Third-Year Conversation. (2:2:0) Prerequisite Tahitian 211 or foreign residence experience.
Advanced conversational skills.

Tongan Courses

101A,B. First-Year Tongan. (2:3:0 ea.)
Basic language skills

102. First-Year Tongan. (4:4:0) Prerequisite: Tongan 101.
Basic language skills.

201. Second-Year Tongan. (4:4:0) Prerequisites: Tongan 101 and 102 or foreign residence experience.
Conversation, vocabulary building, and reading and writing skills, emphasizing reading.

211. Second-Year Conversation. (2:2:0) Prerequisite: Tongan 201 or foreign residence experience.
Intermediate listening comprehension and speaking skills.

311. Third-Year Conversation. (2:2:0) Prerequisite: Tongan 211 or foreign residence experience.
Advanced conversational skills.

Slavic Languages

Polish Courses

101A,B. First-Year Polish. (2:3:0)
Basic language skills.

102. First-Year Polish. (4:4:0) Prerequisite: Polish 101.
Basic language skills.

201. Second-Year Polish. (4:4:0) Prerequisite: Polish 101 and 102 or foreign residence experience.
Conversation, vocabulary building, and reading and writing skills, emphasizing reading.

211. Second-Year Conversation. (2:2:0) Prerequisite: Polish 201 or foreign residence experience.
Intermediate listening comprehension and speaking skills.

311. Third-Year Conversation. (2:2:0) Prerequisite: Polish 211 or foreign residence experience.
Advanced conversational skills.

Russian

The following courses beyond Russian 301 are required for the major in Russian: 311, 321, 322, 326, 340R, 345, 411, 412, 440, 441, 442.

Minors Recommended for Russian Majors

All teaching majors are required to work under Option 1. Nonteaching majors have a choice of Option 1 or Option 2.

Option 1. Complete a minor as described by the minor department. Minors may be selected to fit the individual needs of the student upon consultation with the major adviser. (Minors for students who seek teaching certificates must be chosen from those areas approved by the TCO.) Recommended areas include a second modern foreign language, English, European studies, comparative literature, humanities, social studies, business, and the fine arts.

Option 2. Majors in the department who are not seeking teaching certificates need not have a formal minor but must complete at least 14 hours from among the following related fields: a second modern foreign language (upper-division courses only), English (excluding 100-level courses), linguistics, European history or geography, humanities, comparative literature, and other areas approved by the major adviser.

Strongly recommended additional courses are: Engl. 251, Fundamentals of Literature, or Engl. 252, Writing about Literature; CompLit. 310, Introduction to Literary Analysis and Comparative Literature; Ling. 324, Introduction to Linguistics (Traditional) and/or 325, Introduction to Linguistics (Modern); Hist. 330, Tsarist Russia and/or 311, The USSR and Eastern Europe; Geog. 465, USSR and Its Satellites; Econ. 331, Economics of the Soviet Union and Eastern Europe.

Russian Minors for Non-Russian Majors.

For the minor, 13 hours past the 301 level are required as follows: 311, 321, 322 or 326, 345, 441 or 442 or 340R.

Courses

101, 102. First-Year Russian. (5:5:3 ea.) Prerequisite: for 102, Russian 101.

185, 186. Russian for Reading. (2:2:0 ea.) Prerequisite: for 185, none; for 186, Russian 185 or equivalent.
Reading proficiency in technical Russian.

201. Intermediate Russian. (5:5:3) Prerequisite: Russian 102 or consent of instructor, based on prior Russian language experience.
Grammar review and conversation.

301. Intermediate Readings. (3:3:2) (G-HA) Prerequisite: Russian 201 or consent of instructor.
Discussion in Russian of diverse readings, both expository and literary.

311. Intermediate Conversation. (2:2:1) Prerequisite: Russian 301 or consent of instructor.
Discussion in Russian of topics on Russian culture.

321, 322 Grammar and Composition. (3:3:0 ea.) Prerequisite: for 321, Russian 301 or equivalent; for 322, Russian 321 or equivalent.

326. Pronunciation and History of the Russian Language. (2:2:1) Prerequisites: Russian 101 and 102 or consent of instructor.
To be taken as early as possible in the student's program.

340R. (Russian-CompLit.) Russian Literature in Translation. (3:3:0 ea.) (G-HA)
Introduction to nineteenth- and twentieth-century Russian literature. Fall Semester is a general survey, whereas individual writers will be studied other semesters.

345. Cultural Survey of Russia. (3:3:1) (G-HA)
Study in English of Slavic culture, emphasizing Russia.

411, 412. Advanced Conversation. (2:2:1 ea.) Prerequisite: Russian 301 or consent of instructor.
Advanced conversation and listening comprehension.

440. Survey of Russian Literature from the Beginning through the Eighteenth Century. (2:2:0) (G-HA)
Lectures in English: majors read some works in Russian.

441. Survey of Russian Literature in the Nineteenth Century. (3:3:0) (G-HA) Prerequisite: Russian 301 or equivalent.

442. Survey of Russian Literature in the Twentieth Century. (3:3:0) (G-HA) Prerequisite: Russian 301 or equivalent.

490R. Individual Study in Russian. (1-3:Arr.:Arr. ea.) Prerequisite: advance consent of instructor.
Assignments made to fit the needs of the advanced student.

590R. Individual Study in Russian. (1-3:3:0) Prerequisites: graduate standing, third-year Russian or equivalent.
Assignments to fit individual needs of the advanced student.

Serbo-Croatian Courses

101A,B. First-Year Serbo-Croatian. (2:3:0 ea.)
Basic language skills.

102. First-Year Serbo-Croatian. (4:4:0) Prerequisite: Serbo-Croatian 101.
Basic language skills.

201. Second-Year Serbo-Croatian. (4:4:0) Prerequisite: Serbo-Croatian 101 and 102 or foreign residence experience.
Conversation, vocabulary building, and reading and writing skills, emphasizing reading.

211. Second-Year Conversation. (2:2:0) Prerequisite: Serbo-Croatian 201 or foreign residence experience.
Intermediate listening comprehension and speaking skills.

311. Third-Year Conversation. (2:2:0) Prerequisite: Serbo-Croatian 211 or foreign residence experience.
Advanced conversational skills.

Middle Eastern Languages

See World Affairs, Asian Studies

French and Italian

Professors: Brown (Chairman, 250 MSRB), Green, Turner.
Associate Professors: Ashford, H. Clark, Jensen, Kimball, Lambert, Slade
Assistant Professors: Spartano, Tarr.
Instructors: Boynton, Catano, Thompson.

Degrees Offered

The Department of French and Italian offers the Bachelor of Arts in both Italian and French. The Master of Arts degree is offered in French.

French

Undergraduate Program

Twenty-nine hours of course work beyond 201 are required for a departmental major: 301, 321, 322, 326, 401, 441, 442, 443, 444, 445, and 495.

Seventeen hours of course work are required for a departmental minor: 301, 311, 321, 326, 440, and either 429 or 445. Teaching majors and minors, see French under the Secondary Education and Foundations Department listings.

No D credit will be accepted as part of the major or minor requirements.

Half-Year in Paris

French majors and minors who have not lived in French-speaking countries are encouraged to participate in the University-sponsored half-year in Paris. They may choose the January-June program or the June-December program. This foreign residence provides excellent opportunities for developing language proficiency and for better acquaintance with the history and culture of France.

Intensive Program

The department offers an intensive course in French for those who have taken French 101 and 102 or their equivalent. The student will enroll for 9 credits that include French 201, 211, and 301, all to be taken during a 2-hour block in the same semester. Majors and minors are urged to apply for this program. The intensive program will be offered Fall Semester and Spring Term only.

Minors Recommended for French Majors

(All teaching majors are required to work under Option 1. Nonteaching majors have a choice of Option 1 or Option 2.)

Option 1. Complete a minor as described by the minor department. Minors may be selected to fit the individual needs of the student upon consultation with the major adviser. (Minors for students who seek teaching certificates must be chosen from these areas approved by the TCO.) Recommended areas include a second modern foreign language, Latin, Greek, English, European studies, comparative literature, humanities, social studies, business, or one of the fine arts.

Option 2. Majors in the department who are not seeking teaching certificates need not have a formal minor, but must complete at least 14 hours from among the following related fields: a second modern foreign language (upper-division courses only), Latin, Greek, English (excluding 100-level courses), linguistics, classical civilization, European history or geography, humanities, archaeology, comparative literature, or other areas approved by the major adviser.

Graduate Program

Programs. Master of Arts (M.A.).

Entrance Examinations Required. None.

Application Consideration Dates. Same as Graduate School deadlines.

Entry Times. Any regular registration.

Master of Arts

Prerequisites. A bachelor's degree in French or equivalent, plus a reading knowledge of another foreign language.

Fields. French literature, French teaching methods.

Minors Permissible. Option 2.

Requirements. Minimum of 28 semester hours plus thesis (6-hr. min.—699R).

Required Course. French 601.

Courses

95R. Beginning French for Graduate Students. (5:5:0 ea.)

101, 102. First-Year French. (4:4:4 ea.) Prerequisite: for 102, French 101 or equivalent.
For those who have had no French. Daily development of the four basic language skills: comprehension, speaking, reading, and writing

200. Intermediate French Conversation. (5:5:0) Prerequisite: French 102.

201. Intermediate French Reading and Conversation. (4:4:4) Home Study also. Prerequisite: French 102, two years of French in high school, or consent of instructor.

211. Second-Year Conversation. (2:2:2) Prerequisite: French 102 or consent of instructor. May be taken concurrently with 201.

301. Introduction to French Literature. (3:3:0) Home Study also. (G-HA) Prerequisite: French 201 or consent of instructor.

302. Advanced French. (5:5:0)

311. Third-Year Conversation. (2:2:1) Prerequisite: French 211 or consent of instructor. May be taken concurrently with 301.

321. Third-Year French Grammar. (3:3:0) Home Study also. Prerequisite: 16 hours of French or equivalent.

322. Third-Year Composition. (2:2:2) Prerequisite: French 321.

326. French Phonetics and Pronunciation. (2:2:2) Prerequisite: French 301.

339R. (French-CompLit.) French Literary Masterpieces in Translation. (3:3:0)
Topics vary.

345. Contemporary Culture. (3:1:3) (G-HA) Prerequisite: French 102 or equivalent.
The people and their customs and institutions, as experienced abroad

377. French Language Teaching Procedures. (3:2:2) Prerequisites: French 321, 326, 440 or 445, SecEd. 276 for students planning to certify. (Prospective teachers are advised to take French 377 as near the end of their major course work as possible and just before student teaching.)
Mastery of teaching skills specific to foreign language instruction. Lectures, demonstrations, practice in instruction.

401. Bibliography and Research Techniques for Undergraduates. (1:1:0) Should be taken concurrently with 301.

411. Fourth-Year Conversation. (2:2:1) Prerequisite: French 311 or its equivalent, as determined by adviser.

429. Introduction to Stylistic and Literary Analysis. (3:3:0) (G-HA) Prerequisites: French 321 and 322 or their equivalents.
Refinement of writing skills based on stylistic analysis and explication de textes.

440. Historical Survey of French Literature. (4:4:0) (G-HA) Prerequisite: French 301 or consent of instructor.
For minors only. Comprehensive view of the development of French literature. Samplings from most of the great writers.

441. Survey of French Literature and Culture. (3:3:0) Home Study also. (G-HA) Prerequisite: French 301 or equivalent or consent of instructor.
Literature of the Middle Ages through sixteenth century. Representative works and writers from 1000 to 1600 (includes Chanson de Roland, Villon, Rabelais, Ronsard, and Montaigne).

442. Survey of French Literature and Culture. (3:3:0) Home Study also. (G-HA) Prerequisite: French 301 or consent of instructor.
The seventeenth and eighteenth centuries: great works and writers of the Siècle classique and the Siècle des lumières (includes Corneille, Racine, Moliere, Montesquieu, Voltaire, and Rousseau).

443. French Literature of the Nineteenth Century. (3:3:0) Prerequisite: French 301 or consent of instructor.
Important literary and artistic movements and representative writers (includes Balzac, Stendhal, Zola, Flaubert, Baudelaire, Hugo, and Mallarme).

444. French Literature of the Twentieth Century. (3:3:0) Prerequisite: French 301 or equivalent.
Pre- and post-World War II literature (includes Proust, Camus, Valery, and Sartre).

445. Introduction to French Civilization. (3:3:0) (G-HA) Prerequisite: French 301 or consent of instructor.

479. Secondary Student Teaching. (4-8:0:20-40) Prerequisites: SecEd. 276, 301; French 321, 377.

490R. Individual Study in French. (1-3:Arr.:Arr. ea.)
Assignments to fit the individual needs of the advanced student. Not to be taken in lieu of classes.

495. Senior Seminar for Majors. (3:2:0) Prerequisite: to be taken in the senior year only.
Demonstrating proficiency in language skills; researching, organizing, and presenting ideas.

511. Advanced Conversation for Students of Institute. (2:2:1)

520. Teaching French Grammar for Students of Institute. (2:2:0)

601. Bibliography and Research Techniques. (1:1:0)

☐ **Latin 621. Romance Philology.** (3:3:0)

622. History of French Language. (3:3:0)

626. French Phonology. (2:2:2) Prerequisite: French 326 or consent of instructor.

629. Stylistics. (3:3:0)
Intensive linguistic and literary analysis of French, especially from modern writers: syntax, translation, advanced stylistic analysis and explication of texts.

645R. Studies in French Civilization. (3:3:0 ea.)

660R. Studies in Medieval French Literature. (3:3:0 ea.)
Topics vary.

665R. Studies in Renaissance French Literature. (3:3:0 ea.)
Topics vary.

670R. Studies in Seventeenth-Century French Literature. (3:3:0 ea.)
Topics vary.

675R. Studies in Eighteenth-Century French Literature. (3:3:0 ea.)
Topics vary.

677. Principles of Foreign Language Learning and Teaching. (2:2:0) Prerequisite: French 377 or consent of instructor.
Basic theories and principles of language learning and teaching. Issues, trends, and current practices are examined. For experienced language teachers.

680R. Studies in Nineteenth-Century Romantic and Post-Romantic Movements. (3:3:0 ea.)
Topics vary.

685R. Studies in Twentieth-Century Pre- and Post-World War II Movements. (3:3:0 ea.)
Topics vary.

690R. Directed Readings. (1-2:Arr.:0 ea.)
Individual study, on a graduate level, to fit the needs of the graduate student. Not to be taken in lieu of classes.

692R. Seminar in Philology. (1-2:1-2:0 ea.)

697R. Seminar in Teaching of French. (2:2:0 ea.)

699R. Master's Thesis. (Arr.)

795R. Seminar in French Literature. (3:3:0 ea.)
Topics vary.

799R. Doctoral Dissertation. (Arr.)

Italian

The Italian language is an indispensable tool for prospective students in music (voice), art, history, European studies, and comparative literature. Italian is also important to the student who wishes to experience the life and the unique culture of Italy.

Undergraduate Program

Prerequisite Training. Students desiring a major or minor in Italian may be required to take all, some, or none of the prerequisite language courses (101, 102, 201, 211, 311), depending on their previous experience with the Italian language. This experience may be from high school courses, foreign residence (mission, Summer in Italy, etc.) or from a variety of other sources. The department offers placement examinations and counseling services to help students determine which courses may be necessary as prerequisite language training. All of the prerequisite courses will usually be waived for students returning from an Italian-speaking mission.

Italian Major. A major in Italian requires at least 26 hours of credit from upper-division courses beyond 201, which must include the following: Italian 301, 321, 322, 326, 440, 445. The remaining hours are to be taken from the advanced courses in literature: 460, 465, 470, or 485. No D credit will be accepted as part of the 26-hour major requirement.

Italian Minor. A minor requires 17 hours of credit from upper-division courses which must include Italian 301, 311, 321, 326, and 440. The remaining hours are to be chosen from 445, 460, 465, 470, and 485.

Minors Recommended for Italian Majors

All Italian majors have the choice of working under Option 1 or Option 2.

Option 1. Complete a minor as described by the minor department. Minors may be selected to fit the individual needs of the student upon consultation with the Italian major adviser. Recommended areas include a second modern foreign language, Latin, Greek, English, European studies, comparative literature, humanities, social studies, business, or one of the fine arts.

Option 2. Majors in Italian need not have a formal minor but must complete at least 14 hours from among the following related fields: a second modern foreign language (upper-division courses only), Latin, Greek, English (excluding 100-level courses), linguistics, classical civilization, European history or geography, humanities, archaeology, comparative literature, or other areas approved by the Italian major adviser.

Strongly recommended additional courses for students of Italian are: Engl. 251, Fundamentals of Literature, or 351, The Criticism and Appreciation of Literature, CompLit 310, Introduction to Literary Analysis and Comparative Literature; Ling. 324, Introduction to Linguistics (Traditional) or 325, Introduction to Linguistics (Modern); Hist. 312, The Renaissance: Age of Transition; and ArtDs. 406, Italian Renaissance Art.

Courses

101. First-Year Italian. (4:4:1)
Special attention to accurate pronunciation for the benefit of music and art students. Grammar and graded reading.

102. First-Year Italian. (4:4:1) Prerequisite: Italian 101 or equivalent.

201. Intermediate Italian Reading and Conversation. (4:4:0) Prerequisite: Italian 102 or two years of high school Italian or equivalent.
Reading, conversation, vocabulary building, and review of grammar.

211. Second-Year Conversation. (2:2:2) Prerequisite: Italian 102 or consent of instructor. May be taken concurrently with 201

301. Introduction to Italian Literature. (3:3:0) (G-HA) Prerequisite: Italian 201 or consent of instructor.
Complete works of Italian literature from various periods and genres.

311. Third-Year Conversation. (2:2:2) Prerequisite Italian 201 or consent of instructor. May be taken concurrently with 201.
Discussion in Italian of topics dealing with Italy

321. Third-Year Italian Grammar. (3:3:0) Prerequisite Italian 201 or equivalent. May be taken concurrently with 301.
Intensive review of grammar; vocabulary building

322. Italian Composition. (2:2:0) Prerequisite Italian 201 or equivalent.
Exercises in Italian composition.

326. Italian Phonetics and Pronunciation. (3:3:0) Prerequisite: Italian 321 or consent of instructor.
History of the Italian language, emphasizing pronunciation.

440. Survey of Italian Literature. (3:3:0) (G-HA) Prerequisite. Italian 301 or consent of instructor.
Historical survey of Italy's literary periods, genres, and great writers. Prerequisite to study in all other advanced literature courses in Italian.

445. Introduction to Italian Civilization. (3:3:0) (G-HA) Prerequisite: Italian 301 or consent of instructor.
Institutions, culture, and fine arts that have produced the unique Italian character.

460. The Age of Dante. (3:3:0) (G-HA) Prerequisite: Italian 440 or consent of instructor.

465. Italian Literature of the Renaissance. (3:3:0) (G-HA) Prerequisite: Italian 440 or consent of instructor

470. Italian Literature of the Romantic Period. (3:3:0) (G-HA) Prerequisite Italian 440 or consent of instructor

485. Italian Literature of the Twentieth Century. (3:3:0) (G-HA) Prerequisite. Italian 440 or consent of instructor.

490R. Individual Study in Italian. (1-3 Arr. Arr. ea.)
Assignments to fit individual needs of the advanced student. Not to be taken in lieu of classes

Germanic Languages

Professors: Davis, Folsom, Kelling (Chairman, 270 MSRB), Rogers, Smith, Speidel, Watkins.
Associate Professors: Baker, Harris, Keele, Luckau, Roos, C. Tate, Wilson.
Assistant Professors: Luthy, Sondrup, G. Tate.
Instructor: Johansson.

The Department of Germanic Languages offers instruction or credit by examination in the following areas:

Afrikaans
Dutch
German
Scandinavian Studies (Danish, Finnish, Icelandic, Norwegian, and Swedish)

Credit by Examination. In accordance with University policy, a student may apply for credit for any course offered within the department if the student has gained the equivalent knowledge and has had the equivalent experience elsewhere, provided the student has received no college credit for this knowledge and experience. Applications for credit of this type will be evaluated by intensive examinations.

Former missionaries and other students with extensive language and cultural experience who desire to apply for several hours of credit must demonstrate the validity of their application in the following manner. (1) by successfully passing a written examination and (2) by successfully passing an advanced course in the language for which they are applying for credit. The advanced courses which are applicable are Danish: Scandinavian 441; Dutch: Dutch 340; Finnish: Scandinavian 447; German: German 401; Norwegian: Scandinavian 441; and Swedish: Scandinavian 445. Applications and information on examinations are available in the department office.

Degrees Offered

Afrikaans. No degree offered
Dutch. No degree offered.
German. Bachelor of Arts, Master of Arts; major and minor.
Scandinavian Studies. Bachelor of Arts, minor.

Afrikaans Courses

***101, 102. First-Year Afrikaans.** (4:4:0 ea.)
Basic language skills

***201. Second-Year Afrikaans.** (4:4:0) Prerequisite. Afrikaans 101 and 102 or equivalent experience.
Conversation, vocabulary building, and reading and writing skills, emphasizing reading.

***211. Second-Year Conversation.** (2:2:0) Prerequisite: Afrikaans 102 or equivalent experience
Intermediate listening comprehension and speaking skills.

***311. Third-Year Conversation.** (2:2:0) Prerequisite: Afrikaans 211 or equivalent experience
Advanced conversational skills.

*Credit by examination only

Dutch Courses

***101, 102. First-Year Dutch.** (4:4:0 ea.)
Basic language skills.

***201. Second-Year Dutch.** (4:4:0) Prerequisite. Dutch 101 and 102 or equivalent experience
Conversation, vocabulary building, and reading and writing skills, emphasizing reading

***211. Second-Year Conversation.** (2:2:0) Prerequisite Dutch 102 or equivalent experience.
Intermediate listening comprehension and speaking skills

***311. Third-Year Conversation.** (2:2:0) Prerequisite: Dutch 211 or equivalent experience.
Advanced conversational skills.

340. Introduction to Dutch Literature. (4:4:0) (G-HA) Prerequisite: reading knowledge of Dutch.
Readings from the best Dutch literature; basic literary concepts.

*Credit by examination only.

German
Undergraduate Program

Half-Year in Salzburg. German majors and minors who have not had residence experience in the German-speaking countries are encouraged to participate in the annual University-sponsored half-year in Salzburg, Austria. This program provides excellent opportunities for developing language proficiency and for becoming better acquainted with the history and cultural achievements of Europe.

Prerequisite Training. Students desiring a major or minor in German may be required to take all, some or none of the prerequisite language courses (101, 102, 201, 211, 301, 311), depending on their previous experience with the German language. This experience may be from high school courses, foreign residence (mission, Salzburg program, etc), or from a variety of other sources. The department offers placement examinations and counseling service to help students determine which courses may be necessary as prerequisite language training. All of the above prerequisite courses will usually be waived for students returning from a German-speaking mission. **Students with no foreign residency must take 211 and 311 as part of their prerequisite training for a German major or minor.**

German Major. German 321, 322, and an additional 20 hours of upper-division German beyond 322. Applicants for teaching assistantships must complete German 377 in addition. No D credit will be accepted as part of the major requirement.

German Minor. German 321, 401, 440, and one additional class above 321.

Teaching Majors and Minors. See German in the Secondary Education and Foundations Department listings.

Minors Recommended for German Majors

Option 1. Complete a minor as described by the minor department. (Minors will be required of all those who seek teaching certificates and must be chosen from those areas approved by the TCO.) Minors may be selected to fit the individual needs of the student, but recommended areas include a second modern foreign language, Latin, Greek, English, European studies, comparative literature, humanities, social sciences, business, or one of the fine arts.

Option 2. Majors in the department who are not seeking teaching certificates need not have a formal minor but must complete at least 14 hours from among the following related fields: a second modern foreign language (upper-division courses only), Latin, Greek, English (excluding 100-level courses), linguistics, classical civilization, German history, European geography, humanities, comparative literature, or other areas approved by the major adviser. It is recommended that these hours be chosen from more than one field.

Course Work in Translation and Interpretation

Four courses are designed to train students in translating and interpreting from and into German: 427, 428, 527, 528. The program must be entered Fall Semester and taken in sequence, one course each semester. The program is primarily designed for majors in other disciplines who want to supplement their teaching with the skill of translating and interpreting from and into German.

Graduate Program

Entrance Examinations. None required. However, students who have done their undergraduate work at another institution will be required to take a comprehensive oral examination during their first semester to assist the department in advisement.

Application Consideration Dates. Same as Graduate School deadlines.

Entry Times. Fall Semester recommended.

Master of Arts

Prerequisites. Undergraduate major in German or its equivalent and knowledge of a second European language of 201 equivalent level.

Fields. German language, German literature, German teaching.

Requirements. Minimum of 29 semester hours plus thesis (6-hr. min.); written and oral comprehensive examinations.

Required Courses. First semester: German 615, 650, 677. Second semester: German 620, 694R. Third semester: German 692R. Fourth semester: German 628.
The M.A. program begins Fall Semester. Students attending Summer Term only, or beginning Winter Semester or Spring Term must work out their program carefully with the graduate adviser before registration.
A 9-hour course load is considered a minimum. Four semesters is the maximum time a student may hold a student instructorship. Students who desire to speed up their program, take supporting courses in other areas, etc., may increase the semester course load. Students are also encouraged to use Spring and Summer Terms for this purpose. (This option may be necessary for students who have not completed a second foreign language as undergraduates.)

Courses

95R. Beginning German for Graduate Students. (0:5:0 ea.) Evening classes only.

101, 102. First-Year German. (4:4:4 ea.
For those who have had no German. Pronunciation, reading, fundamentals of grammar, emphasizing conversation.

200. Intermediate German Conversation. (5:5:0)
For Salzburg Study Abroad students only.

201. Second-Year German. (4:4:1) Home Study also. Prerequisite: German 101 and 102 or equivalent experience.
Reading, review of grammar, conversation, vocabulary building.

211. Second-Year Conversation. (2:2:1) Prerequisite: German 102 or equivalent experience.
Further development of intermediate listening comprehension of speaking skills.

301. Intermediate German Reading. (3:3:0) Home Study also. Prerequisite: German 201 or equivalent.
Extensive readings and introduction to basic literary concepts.

302. Advanced German Conversation. (5:5:0)
For Vienna Study Abroad students only.

311. Third-Year German Conversation. (2:2:1) Prerequisite: German 211 or equivalent experience.
Advanced conversational skills.

321. Third-Year German Grammar and Composition. (3:3:0) Home Study also. Prerequisite: 16 hours of college German or equivalent.
Intensive review of grammar; written and oral reports.

322. German Stylistics and Introduction to Literary Analysis. (3:3:0) Home Study also. (G-HA) Prerequisite: German 321.

326. German Phonetics and Pronunciation. (2:2:1) Prerequisite: German 301.

341R. (German-CompLit.) Masterpieces of German Literature in Translation. (3:3:0 ea.) (G-HA)
Topic varies each semester. Three hours applicable to German major if works are read in German. Course not applicable to minor.

377. German Language Teaching Procedures. (3:3:2) Prerequisites: German 321, 326, 401; SecEd. 276 for anyone certifying.
Mastery of teaching skills specific to foreign language instruction. Lectures, demonstrations, participation in instruction, and preparation of teaching materials. Does not count toward hours for German major or minor.

401. Cultural History of German-Speaking Peoples. (3:3:0) (G-HA)

423. German News Reports. (3:3:0) Prerequisite: German 321 or equivalent.
Analyzing current news items from East and West as a basis for grammatical and stylistic exercises.

427. Beginning Translation and Interpretation 1. (3:3:2) Prerequisites: German 321 and 401 or equivalents.
History, theory, and principles of translation; contrastive linguistic analysis and exercises in grammatical, syntactic, and semantic difficulties of the two languages involved.

428. Beginning Translation and Interpretation 2. (3:3:2) Prerequisites: German 322 and 427
Continuation of contrastive exercises in grammatical, syntactic, and semantic problems; comparing translation of texts in general fields; introduction to interpreting.

429. The Structure of German. (3:3:0) Prerequisite: German 322.

440. Survey of German Literature and Culture. (4:4:0) (G-HA) Prerequisite: German 301 or equivalent.
For minors only.

441. German Literature from the Beginning to 1700. (3:3:0) (G-HA) Prerequisite: German 301 or equivalent.

442. German Literature in the Eighteenth Century. (3:3:0) Home Study also. (G-HA) Prerequisite: German 301 or equivalent.

443. German Literature in the Nineteenth Century. (3:3:0) (G-HA) Prerequisite: German 301 or equivalent.

444. German Literature in the Twentieth Century. (3:3:0) (G-HA) Prerequisite: German 301 or equivalent.

479. Secondary Student Teaching. (4-8:0:20-40) Prerequisites: SecEd. 276; German 321, 377.

490R. Special Studies in German. (1-3.Arr.:Arr. ea.) By special permission only

495R. Senior Seminar for Majors. (3:3:0 ea.) Prerequisite: at least 6 hours of German literature (excluding 301).

520. Advanced German Composition and Grammar. (2:2:0) Prerequisite: German 321 or consent of instructor.
Vocabulary, grammar, and composition for high school and junior college teachers.

527. Intermediate Translation and Interpretation 1. (3:3:2) Prerequisites: German 428 and 429 or equivalents.
Comparative terminology in natural science, social sciences, technology, etc. Individual and group translation projects, sight translation, and bilingual dialogues.

528. Intermediate Translation and Interpretation 2. (3:3:2) Prerequisite: German 527 or equivalent.
Translating difficult texts from chosen conceptual fields. Literary translations, dialogue interpretations, consecutive and simultaneous interpretation, and computer-assisted translation. Senior thesis.

615. Applied German Linguistics. (3:3:0) Prerequisite: German 429 or consent of instructor.
Applying linguistics to the problems of teaching German grammar.

620. History of the German Language. (3:3:0)

622. Gothic and Comparative Germanic Linguistics. (3:3:0)

626. German Phonology. (3:3:0) Prerequisite. German 326 or consent of instructor.
The sounds of German and its stress, rhythm, and intonation patterns compared and contrasted with those of English.

628. Middle High German. (3:3:0)

641. German Poetry. (3:3:0) Prerequisites: German 601 and 650 or consent of instructor.

642. German Drama. (3:3:0) Prerequisites: German 601 and 650 or consent of instructor.

643. The German Novel to 1945. (3:3:0) Prerequisites: German 601 and 650 or consent of instructor.

644. The German Novelle. (3:3:0) Prerequisites: German 601 and 650 or consent of instructor.

650. Understanding and Analyzing Literature. (3:3:0)

677. Principles of Foreign Language Learning and Teaching. (2:2:0) For experienced teachers only.
Appraisal of popular approaches in foreign language teaching; analysis of issues, trends, and innovations; and choice of interest area for thesis project.

689. Contemporary German Literature. (3:0:0) Prerequisite: consent of instructor.

690R. Special Studies in German. (1-2:Arr.:0 ea.) By special permission only.

692R. Seminar in Philology. (3:3:0 ea.)
Topics vary.

694R. Seminar in Literature. (3:3:0 ea.)
Topics vary.

697R. Seminar in the Teaching of German. (2:2:0 ea.)
Latest developments and research in various aspects of language teaching

699R. Master's Thesis. (Arr.)

799R. Doctoral Dissertation. (6-9:Arr.:Arr. ea.)

Scandinavian Studies
Undergraduate Program

Minor: 13 hours of Scandinavian courses as follows: 401, one course from 441-447, and an additional 6 hours from 344R, 490R, 529, or 594R.

Graduate Program

Minor. As approved by the student's graduate committee.

Danish Courses

***101, 102. First-Year Danish.** (4:4:0 ea.)
Basic language skills.

***201. Second-Year Danish.** (4:4:0) Prerequisite: Danish 101 and 102 or equivalent experience.
Conversation, vocabulary building, and reading and writing skills, emphasizing reading

***211. Second-Year Conversation.** (2:2:0) Prerequisite. Danish 102 or equivalent experience.
Intermediate listening comprehension and speaking skills.

***311. Third-Year Conversation.** (2:2:0) Prerequisite Danish 211 or equivalent experience
Advanced conversational skills

*Credit by examination only

Finnish Courses

101, 102. First-Year Finnish. (4:4:0 ea.)
Basic language skills.

201. Second-Year Finnish. (4:4:0) Prerequisite: Finnish 101 and 102 or equivalent experience.
Conversation, vocabulary building, and reading and writing skills, emphasizing reading.

***211. Second-Year Conversation.** (2:2:0) Prerequisite: Finnish 102 or equivalent experience.
Intermediate listening comprehension and speaking skills.

***311. Third-Year Conversation.** (2:2:0) Prerequisite: Finnish 211 or equivalent experience.
Advanced conversational skills.

*Credit by examination only.

Icelandic Courses

101, 102. First-Year Icelandic. (4:4:4 ea.)
Basic language skills.

201. Second-Year Icelandic. (4:4:1) Prerequisite: Icelandic 102 or equivalent experience.
Conversation, vocabulary building, and reading and writing skills, emphasizing writing.

211. Second-Year Conversation. (2:2:1) Prerequisite: Icelandic 102 or equivalent experience.
Intermediate listening comprehension and speaking skills.

311. Third-Year Conversation. (2:0:0) Prerequisite: Icelandic 211 or equivalent experience.
Advanced conversational skills.

Norwegian Courses

101, 102. First-Year Norwegian. (4:4:0 ea.)
Basic language skills.

201. Second-Year Norwegian. (4:4:0) Prerequisite: Norwegian 101 and 102 or equivalent experience.
Conversation, vocabulary building, and reading and writing skills, emphasizing reading.

***211. Second-Year Conversation.** (2:2:0) Prerequisite: Norwegian 102 or equivalent experience.
Intermediate listening comprehension and speaking skills.

***311. Third-Year Conversation.** (2:2:0) Prerequisite: Norwegian 211 or equivalent experience.
Advanced conversational skills.

*Credit by examination only.

Swedish Courses

101, 102. First-Year Swedish. (4:4:0 ea.)
Basic language skills.

201. Second-Year Swedish. (4:4:0) Prerequisite: Swedish 101 and 102 or equivalent experience.
Conversation, vocabulary building, and reading and writing skills, emphasizing reading.

***211. Second-Year Conversation.** (2:2:0) Prerequisite: Swedish 102 or equivalent experience.
Intermediate listening comprehension and speaking skills.

***311. Third-Year Conversation.** (2:2:0) Prerequisite: Swedish 211 or equivalent experience.
Advanced conversational skills.

*Credit by examination only.

Scandinavian Studies Courses

340. Introduction to Danish Literature. (4:4:0)

344R. (Scand.-CompLit.) Masterpieces of Scandinavian Literature. (4:3:0 ea.)
Topic varies each semester. Works may be read in English translation. Course not applicable to minor, but see note under Scandinavian Studies.

401. (Scand.-Hum.) Cultural History of Scandinavia. (3:3:0)
From the Vikings to the present.

441. Dano-Norwegian Literature. (4:4:0) Prerequisite: reading knowledge of Danish or Norwegian.
Readings from the best Norwegian literature. Introduction to basic literary concepts.

445. Swedish Literature. (4:4:0) Prerequisite: reading knowledge of Swedish.

447. Finnish Literature. (4:4:0) Prerequisite: reading knowledge of Finnish.
Readings from the best Finnish literature. Introduction to basic literary concepts.

529. Old Norse. (4:4:0) Prerequisite: knowledge of a modern Scandinavian language helpful but not required.

590R. Individual Study in Scandinavian. (1-3:Arr.:Arr. ea.)

594R. Seminar in Scandinavian Studies. (3:3:0 ea.) Prerequisite: consent of instructor.
Topic varies.

Navajo

See Linguistics, American Indian Languages.

Spanish and Portuguese

Professors: Anderson, Compton, Dowdle, Gibson, Lyon, Moon, Rosen, Shreeve, Taylor.
Associate Professors: Ashworth, Brown, Clegg, Dennis, Hall, Jackson, Quackenbush.
Assistant Professors: Jensen, Ramsey.
Instructors: McMaster, Valentine, Vigo.

Degrees Offered

The Department of Spanish and Portuguese offers the Associate of Arts, Bachelor of Arts, and Master of Arts degrees in Spanish, and the Associate of Arts, Bachelor of Arts, and Master of Arts degrees in Portuguese. See department for Associate of Arts requirements.

Foreign Residence Programs

The Department cosponsors summer residence programs in Mexico and half-year programs in Spain. Spanish majors and minors who have not had foreign residence experience are encouraged to participate in these programs: they provide excellent opportunities for development of language proficiency.

Prospective Graduate Students

Prospective graduate students are reminded that a second, and sometimes a third, language will be required of them in graduate school. It is advisable that work in at least one other language be started before the junior year. For information concerning graduate study, see Graduate Program listed under Spanish.

Minor Recommended for Spanish or Portuguese Majors (All teaching majors are required to work under Option 1. Nonteaching majors will have a choice of Option 1 or Option 2).

Option 1. Complete a minor as described by the minor department. (Minors will be required of all those who seek teaching certificates and must be chosen from those areas approved by the TCO.) Minors may be selected to fit the individual needs of the student, but recommended areas include a second modern foreign language, Latin, Greek, English, Latin American studies, European studies, comparative literature, humanities, social studies, business, or one of the fine arts.

Option 2. Majors in the department who are not seeking teaching certificates need not have a formal minor but must complete at least 14 hours from among the following related fields: a second modern foreign language (upper-division courses only), Latin, Greek, English, linguistics, classical civilization, Latin American history or geography, Spanish history and geography, humanities, archaeology, comparative literature, or other areas approved by the major adviser.

Portuguese
Undergraduate Program

The Associate of Arts Degree in Portuguese requires 28 hours of credit in the major area of study, of which at least 19 hours must be from the following: Portuguese 102, 201, 211, 301, 311, 321 (301 may be replaced by 441, 451, or two of the following: 326, 445, 455), plus any other approved advanced class. Up to 9 hours of approved credit from related areas (art, English, history, humanities, philosophy, political science, sociology, other foreign languages, linguistics) may count toward the 28 hours. (See the department for a list of approved classes.)

The Bachelor of Arts Degree in Portuguese requires at least 24 hours of credit from upper-division courses beyond 301, which must include the following: Portuguese 321, 322, 441, 451. The remaining hours are to be taken from advanced Portuguese classes or Ling. 325. Portuguese-speaking missionaries or natives may not use 311 as part of the 24 hours.

No D credit will be accepted as part of the 24-hour major requirement.

The requirement for a departmental minor is 12 hours of credit from upper-division courses, which must include Portuguese 321, and at least two of the following: Portuguese 441, 445, 451, 455.

Graduate Program

Program. Master of Arts (M.A.).
For information, refer to Graduate Program listed under Spanish.

Courses

101, 102. First-Year Portuguese. (4:4:1 ea.)
Pronunciation, conversation, reading, and fundamentals of grammar. Special attention to Portuguese as the language of Brazil.

201. Intermediate Portuguese Reading and Conversation. (4:4:0) Home Study also. Prerequisite: Portuguese 102 or three units of high school Portuguese.

211. Second-Year Conversation. (2:2:Arr.) Prerequisite: Portuguese 102 or consent of instructor.

301. Introduction to Portuguese Literature. (4:5:0) Home Study also. Prerequisite: Portuguese 201.
Extensive readings in intermediate edited texts; controlled composition.

311. Third-Year Conversation. (2:2:Arr.) Prerequisite: Portuguese 301 or consent of instructor.

321, 322. Third-Year Portuguese Grammar and Composition. (3:3:0 ea.) Prerequisites: Portuguese 301, 16 hours of Portuguese or the equivalent. (Those returning from Portuguese-speaking missions normally begin their Portuguese study with 321.)

326. Portuguese Phonetics and Pronunciation. (2:2:2) Prerequisite: Portuguese 301 or equivalent, or consent of instructor.

341. Masterpieces of Luso-Brazilian Literature. (3:3:0) Prerequisite: Portuguese 321 or equivalent.
Great literary masterpieces of Brazil and Portugal.

441. Survey of Portuguese Literature. (4:0:0) (G-HA) Prerequisite: Portuguese 301 or consent of instructor.
Literary periods, literary genres, and great writers of Portugal

445. Iberian Culture. (2:2:0) (G-HA) Prerequisite: Portuguese 301 or equivalent.

451. Survey of Brazilian Literature. (4:0:0) (G-HA) Prerequisite: Portuguese 301 or equivalent.

455. Ibero-American Civilization. (2:2:0)

490R. Individual Study in Portuguese. (1-3:Arr. Arr. ea.)

520R. Portuguese Composition. (3:3:0)

521. Romance Philology. (3:3:0)

522. History of the Portuguese Language. (2:2:0)

552. Machado de Assis. (2:2:0) Prerequisites: Portuguese 441, 451, or equivalent.

553. O Modernismo. (2:2:0) Prerequisites: Portuguese 441, 451, or equivalent.
The modern movement in Brazilian literature (1920-1945).

641R. Portuguese Literature. (3:3:0)

651R. Brazilian Literature. (3:3:0 ea.)

690R. Directed Readings. (1-2:0:Arr. ea.)

692. Seminar in Philology. (2:2:0)

694R. Seminar in Literature. (2:2:0 ea.)

699R. Master's Thesis. (6-9:Arr.:Arr. ea.)

Spanish
Undergraduate Program

The Associate of Arts Degree requires 28 hours of credit in the major area of study, of which at least 19 hours must be from the following: Spanish 102, 201, 211, 301, 311, 321 (301 may be replaced by 441, 451, or any two of the following: 326, 445, 455, 427), plus any other approved advanced class. Up to 9 hours of approved credit from related areas (art, English, history, humanities, philosophy, political science, sociology, other foreign languages, linguistics) may count toward the 28 hours. (See the department for a list of approved classes.)

The Bachelor of Arts Degree in Spanish requires at least 24 hours of credit from upper-division courses beyond 301, which must include Spanish 321, 322 or 439, 441, 451 (326, 445 and 455 are also required for the teaching major). The additional hours are to be taken from other advanced Spanish offerings beyond 301 or Ling. 325. Spanish 429 is highly recommended for those who wish to specialize in literature. Spanish 322 is recommended for those who wish to emphasize the study of languages. Spanish-speaking missionaries and natives may not use 311 as part of the 24-hour requirement.

No D credit will be accepted as part of the 24-hour major requirement.

The requirement for the departmental minor is 12 hours of credit from upper-division courses beyond 301 and must include 321, 441 or 451, 445 or 455 (for the requirements for a teaching major or minor see the Education section of this catalog).

Spanish 326 and 377 are required for a graduate teaching assistantship.

The department also offers a **Translator Training Program** in Spanish. Upon completion of the four-semester program (Spanish 427, 428, 527, 528), the student will be awarded a certificate as a translator. See the department for additional information.

Graduate Program

Programs. Spanish: Master of Arts (M.A.). Portuguese Master of Arts (M.A.).

Entrance Examinations Required. None

Application Consideration Dates. Same as Graduate School deadlines.

Entry Times. Any regular registration.

Master of Arts

Prerequisites: Undergraduate major in Spanish or Portuguese, or its equivalent.

Fields. Spanish language, Spanish literature, Spanish teaching. Portuguese language, Portuguese literature.

Minor Permissible. Option 1 or 2.

Requirements. Minimum of 28 semester hours plus thesis (6-hr. min.—699R). The reading knowledge of a second foreign language is also required. For the teaching emphasis this must be an approved language, and reading proficiency must be on a third semester (201) level. Mastery of Spanish as demonstrated by a proficiency test. A minimum of one year of language teaching experience (or two years as a student instructor) is required for the teaching emphasis.

Courses

95R. Beginning Spanish for Graduate Students. (5:5:Arr. ea.)
Evening classes only.

101, 102. First-Year Spanish. (4:4:4 ea.)
Audio-lingual approach emphasizing pattern practice and common grammatical structures.

200. Intermediate Spanish. (5:5:0)

201. Intermediate Spanish Reading and Conversation. (4:4:1) Home Study also. Prerequisite: Spanish 102 or three units of high school Spanish, or consent of instructor.

211. Second-Year Conversation. (2:2:Arr.) Prerequisite: Spanish 102 or consent of instructor.

301. Introduction to Spanish Literature. (4:5:0) Home Study also. (G-HA)

302. Advanced Spanish. (5:5:0)

311. Third-Year Conversation. (2:2:1)

321, 322. Third-Year Spanish Grammar and Composition. (3:3:0 ea.) Home Study also. Prerequisite: for 321, Spanish 301 or equivalent; for 322, no prerequisite.

326. Spanish Phonetics and Pronunciation. (2:2:2)

345R. Contemporary Culture. (1-3:Arr.:Arr. ea.) (G-HA) Prerequisite: Spanish 102 or equivalent.
Contemporary Spanish (or Spanish-American) culture through a study of the people and their customs and institutions, as experienced abroad.

346R. (Spanish-CompLit.) Hispanic and Brazilian Literature in Translation. (3:3:0)
Readings from outstanding writers of Spain, Brazil, and Spanish America. Topics vary.

377. Spanish Language Teaching Procedures. (3:3:2) Prerequisites: Spanish 321, 326, 445; SecEd. 276 for anyone certifying. (Not to be counted toward the Spanish major or minor requirement. Prospective teachers should take Spanish 377 after as many upper-division Spanish courses as possible and just before student teaching.)
Mastery of teaching skills specific to foreign language instruction. Lectures, demonstrations, participation in instructional activities in actual classroom situations.

425. Structure of the Spanish Language. (3:3:0) Prerequisite: Spanish 322.

427. Beginning Translation and Interpretation 1. (3:3:1) Prerequisite: Spanish 321.

428. Beginning Translation and Interpretation 2. (3:3:0) Prerequisites: Spanish 322 and 427 or equivalents.
Systematic study and contrastive exercises in grammatical, syntactic, and semantic problems. Comparing translations of texts in general conceptual fields.

439. Elements of Literary Analysis. (3:3:0) (G-HA) Prerequisite: Spanish 321.

441. Survey of Spanish Literature. (4:4:0) Home Study also. (G-HA) Prerequisite: Spanish 301 or consent of instructor. Course is a prerequisite to all Spanish peninsular literature classes.

445. Iberian Civilization. (2:2:0) (G-HA) Prerequisite: Spanish 301 or consent of instructor.

451. Survey of Hispanic-American Literature. (4:4:0) (G-HA) Home Study also. Prerequisite: Spanish 301 or consent of instructor. Course is prerequisite to all other Spanish-American literature courses.

453. Chicano Culture. (2:2:0) Prerequisite: Spanish 321 or equivalent.
Contemporary culture (education, popular and fine arts, world view, attitudes, etc.) of the Spanish-speaking American in the U.S.

454. Hispanic-American Novel. (3:3:0) (G-HA) Prerequisite: Spanish 451 or consent of instructor.

455. Ibero-American Culture. (2:2:0) (G-HA)

458. Hispanic-American Short Story. (3:3:0) (G-HA) Prerequisite: Spanish 451 or consent of instructor.
Introduction to the short story and its development as an important literary genre in Spanish America, with principal authors.

470R. Golden Age Literature. (3:3:0 ea.) (G-HA) Prerequisite: Spanish 441 or consent of instructor.

479. Secondary Student Teaching. (4-8:0:20-40) Prerequisite: SecEd. 276; Spanish 301, 377.

485. Introduction to Contemporary Spanish Literature. (3:3:0) (G-HA) Prerequisite: Spanish 441 or consent of instructor.

490R. Individual Study in Spanish. (1-3:Arr.:Arr. ea.)
Assignments to fit individual needs of the advanced student. By permission only.

520. Advanced Spanish Composition and Grammar. (2:2:0)

521. Romance Philology. (3:3:0)

522. History of the Spanish Language. (2:2:0)

523. Border Spanish. (3:3:0) Prerequisite: Spanish 321 or consent of instructor.
Mexican-American speech patterns and their impact upon the Spanish-speaking American subculture.

527. Intermediate Translation and Interpretation 1. (3:3:0) Prerequisite: Spanish 428 or equivalent.
Comparative technical terminology in natural science, social science, technology, etc. Individual and group translation projects, sight translation, computer-assisted translation, bilingual dialogues.

528. Intermediate Translation and Interpretation 2. (3:3:0) Prerequisite: Spanish 527 or equivalent.
Translating difficult texts from chosen conceptual fields. Literary translations, dialogue interpretations, consecutive and simultaneous interpretation, computer-assisted translation. Senior project or thesis.

553R. Spanish-Speaking American (Chicano) Literature. (3:3:0) Prerequisite: Span. 321 or consent of instructor.
Spanish-English literature of the Mexican-American and other Spanish minorities within the United States. Offered Fall Semester alternate years.

556. Hispanic-American Poetry. (2:2:0)

580R. Nineteenth-Century Spanish Literature. (3:3:0 ea.) Prerequisite: Spanish 441 or consent of instructor.

584. Generation of '98 (3:3:0)

601. Bibliography and Research Techniques. (2:2:0)

615. Teaching Spanish Grammar. (2:0:0) Prerequisites: Ling. 325 and Spanish 326 or consent of instructor.

Analysis and organization of Spanish phonology, morphology, and syntax for effective teaching of Spanish grammar.

626. Spanish Phonology. (2:2:0) Prerequisite: Spanish 326 or consent of instructor.
The sounds of Spanish and its stress, rhythm, and intonation patterns contrasted and compared with those of English.

645. Advanced Studies in Hispanic Culture. (2:2:0)

653. Latin American Drama. (2:2:0)

654R. The Spanish-American Novel. (2:2:0 ea.)

656. Modernista Prose and Poetry. (2:2:0)

657. Hispanic-American Essay. (2:2:0)

658. Hispanic-American Short Story. (2:2:0)

660. Spanish Medieval Literature. (2:2:0)

670R. Golden Age Literature. (3:3:0 ea.)

677. Principles of Foreign Language Learning and Teaching. (2:0:0)
Basic theories and principles of language learning and teaching. Issues, trends, and current practices. For experienced language teachers.

685R. Twentieth-Century Literature. (2:2:0 ea.)

690R. Directed Readings. (1-2:Arr.:Arr. ea.) Prerequisite: consent of instructor.
Individual study on a graduate level, to fit the needs of the graduate student.

692R. Seminar in Philology. (2:2:0 ea.)

694R. Seminar in Spanish Literature. (2:2:0 ea.)

697R. Seminar in Spanish Teaching. (2:2:0 ea.)
For experienced language teachers.

699R. Master's Thesis. (Arr.)

794R. Seminar in Literature. (2:2:0 ea.)

799R. Doctoral Dissertation. (6-9:Arr.:Arr. ea.)

Latin American Studies

Professors: Addy (History), Blair (Linguistics), Brower (Sociology), Compton (Spanish), Gibson (Spanish), Layton (Geography), Lyon (Coordinator, Latin American Studies), Otto (Linguistics), Shreeve (Spanish), Taylor (Spanish), Warner (History).

Associate Professors: Chandler (History), Clegg (Coordinator, Spanish-speaking American Studies), Dutton (Economics), Fairbanks (Communications), Hall (Spanish), Hudman (Geography), Jensen (Portuguese), Madsen (TESL), Quackenbush (Spanish), Rogers (Education Administration), Tullis (Political Science), Webb (Secondary Education), Whiting (Communications), Young (Elementary Education).

Assistant Professors: Brown (Spanish), Dennis (Portuguese), Hawkins (Anthropology and Archaeology), Nanto (Economics), Ramsey (Portuguese), Santiago (Continuing Education), Tyler (Language Research Center).

Instructors: Grover (Library Science), Larson (Food Science and Nutrition), Schumway (Music), Slaugh (Home Economics), Warren (Anthropology and Archaeology).

Undergraduate Program

Two programs are offered in Latin American Studies. One centers on Latin America and leads to a Bachelor of Arts degree in Latin American Studies (LAS). The other program focuses on Spanish-speaking Americans within the United States and leads to a Bachelor of Arts degree in Spanish-speaking American Studies (SSAS). The Latin American Center also offers a Master of Arts degree in Latin American Studies and concurrent minors for major work in other departments.

The Spanish-speaking American Studies and Latin American Studies programs are designed to give the student both a rich background in the language, culture, and conditions of the Latin Americans and Spanish-speaking Americans and specific, useful job training. Both degrees require a minor or group of courses in another department to train the student in a specific area of interest. Suggested areas are: business, sociology, social work, psychology, law enforcement, education, communications, nursing, agricultural economics, youth leadership, recreation, history, political science, international relations, industrial education, food science and nutrition, and TESL.

Students may enter either the Latin American Studies or the Spanish-speaking American Studies Program with the approval of the Latin American Studies coordinator. Those desiring a minor should also consult with the coordinator, before registration, regarding classes to be included. Familiarity with Spanish or Portuguese is not necessary before entering a program.

Study Abroad

The University currently offers excellent opportunities for study in Spain and Latin America. These programs are especially advantageous to the student of Latin American Studies or Spanish-speaking American Studies. They provide an opportunity for on-the-scene study in the Spanish language, history, geography, political science, sociology, and various other related fields. The courses offered in these programs help fulfill degree requirements. All students, especially those who have had no previous overseas experience, are strongly encouraged to participate in one or more of these programs.

Note. The Latin American Studies and Spanish-speaking American Studies programs are purposely designed with a great deal of flexibility to allow students maximum freedom in programming a course for their specific needs and interests. To insure a coordinated program, well suited to individual objectives, students are asked to counsel with the coordinator in planning classes.

Requirements for Majors in Latin American Studies

1. Proficiency in either the Spanish or the Portuguese language (depending on the area of concentration) adequate for oral comprehension and speaking ability and research in the student's specialized field. Such proficiency will be determined by examination or by the successful completion of Spanish 321 or Portuguese 321 with a grade of B or better.

2. Minor, or group of supporting courses of 20 semester hours, in one of the departments of the University. Courses are to be selected in consultation with the coordinator of Latin American Studies and an adviser from the minor or supporting department. The minor or group of supporting courses can be in any field.

3. A total of 31 hours completed in courses dealing with Latin America. No D credit may be counted toward this requirement. The following courses must be included:

Anthropology and Sociology
Anthropology 326 (3) or Anthropology 319
or
Sociology 390R (1-3 ea.) Special Topics in Sociology (course will be designed to meet the needs of Latin American Studies students.)

Geography
455 (3) Latin America

History
352 (3) History of Latin America 2
and
457 (3) The Indian in Latin American History
or
459 (3) Inter-American Relations

Latin American Studies
495 (3) Senior Seminar

Languages
455 (2) Ibero-American Culture
and
451 (4) Survey of Brazilian Literature
or
451 (4) Survey of Hispanic-American Literature

Political Science course (3)

Electives (10)
A list of acceptable elective courses is available in the Latin American Center.

Requirements for a Minor in Latin American Studies

1. The same proficiency in Spanish or Portuguese as required for the major.
2. A total of 15 hours in courses dealing with Latin American Studies from the list of approved courses (available in Latin American Center). At least 9 of the 15 hours are to be taken from the core courses outlined for the Latin American Studies major.

Requirements for Majors in Spanish-speaking American Studies

1. Proficiency in the Spanish language adequate for oral comprehension and speaking ability and research in the student's specialized field. Such proficiency will be determined by examination or by the successful completion of Spanish 321 with a grade of B or better.
2. Minor, or group of supporting courses of 20 semester hours, in one of the departments of the University. Courses are to be selected in consultation with the coordinator of Spanish-speaking American Studies and an adviser from the minor or supporting department. The minor or group of supporting courses can be in any field.
3. A total of 31 hours completed in courses dealing with Spanish-speaking Americans. No D credit may be counted toward this requirement. The following courses may be included:

Anthropology
317 (3) Native Peoples of North America

Health
460 (2) Drug Use and Abuse

History
460 (3) The Hispanic Southwest

Latin American Studies
495 (3) Senior Seminar

Geography
450 (3) North America

Political Science
319R. (3 ea.) Topics in American Government and Politics (Minority-Group Politics)

Sociology
223 (3) Racial and Minority-Group Relations

Spanish
455 (2) Ibero-American Culture
453 (2) Chicano Culture
523 (3) Border Spanish
553 (3) Spanish-speaking American (Chicano) Literature

Electives (6)

Requirements for a Minor in Spanish-speaking American Studies

1. The same proficiency in Spanish as required for the major.
2. A total of 15 hours in courses dealing with Spanish-speaking American Studies from the list of approved courses (available in Latin American Center). At least 9 of the 15 hours are to be taken from the core courses outlined for the Spanish-speaking American Studies major. Sociol. 223 and PolSci. 319R must be included.

Graduate Program

Program. Master of Arts (M.A.).

Entrance Examination Required. None.

Application Consideration Dates. Same as Graduate School deadline.

Entry Times. Any regular registration.

Master of Arts

Prerequisites. Undergraduate preparation in the areas of Latin American studies. Oral and written proficiency in the Spanish or Portuguese language*, to be determined by individual examination or successful completion of Spanish or Portuguese 321.

Field. Latin American studies.

Minors Permissible. Any approved minor.

Requirements. For the Master of Arts degree, students will complete at least the following 34 hours of graduate work:

1. 15 semester hours (including at least one research seminar) in their preferred department of concentration.
2. 5 semester hours in a related department.
3. 5 semester hours in a second related department.
4. 3 semester hours in a Latin American Studies Seminar (690R).
5. 6 semester hours of thesis or project credit reflecting the students' multidisciplinary interests and acceptable to both their department of concentration and Latin American Studies.

A final oral examination is required. Of the 34 semester hours, 21 (including project, internship, or thesis) must be in Latin American content courses. Those courses are to be approved by the coordinator. Recommended areas for major and minor fields are: business, agricultural economics, food science and nutrition, law enforcement, public relations, geography, education (elementary, secondary, international), youth leadership, health, economics, international relations, linguistics, teaching English as a second language, nursing, Spanish, sociology, political science, public administration, organizational behavior, etc. A limited number of courses in the 500 or 600 series may cause scheduling problems. Students are urged to contact professors who teach undergraduate Latin American courses and arrange to take them for graduate credit by completing extra work.

Graduate Minor

Prerequisites. None.

Field. Latin American studies.

Requirements. The same proficiency in Spanish or Portuguese as for the major; 11 hours in graduate-level courses in Latin American related subjects.

***Language Option.** When students already have fluency in one of the required languages, they are encouraged to seek proficiency in the other or in a native language (Cakchiquel, Quechua, Guarani, etc.) of Latin America.

Study Abroad. The University currently offers excellent opportunities for study in Spain and Latin America. These programs are especially advantageous to the student of Latin American Studies and provide an opportunity for on-the-scene study in the Spanish language, history, geography, political science, sociology, and various other related fields. The courses offered in these programs help fulfill the requirements for the M.A. degree in Latin American Studies. All students are strongly encouraged to participate in one or more of these programs, especially those who have had no previous overseas experience.

List of Courses

Business Management
430 (3) Introduction to International Business (Latin American emphasis)
431 (3) International Marketing (Latin American emphasis)

Communications
580 (2) Comparative World Communication Systems (Latin America)

Geography
455 (3) Latin America
502R (2 ea.) Seminar in Regional Geography (semesters with Latin American content)
580 (2) Geography of Underdeveloped Areas

History
351 (3) History of Latin America 1
453 (3) Mexico and Caribbean
454 (3) Argentina, Brazil, and Chile
455 (3) Northern South America
457 (3) The Indian in Latin American History
460 (3) The Hispanic Southwest
650 (3) Latin America

Languages
(Portuguese)
552 (2) Machado de Assi
553 (2) O Modernismo
620R (3 ea.) Portuguese Composition
651 (3) Contemporary Brazilian Literature

(Spanish)
455 (2) Ibero-American Culture
520 (1) Advanced Spanish Composition and Grammar
556 (2) Hispanic-American Poetry
645 (2) Advanced Studies in Hispanic Cultures
654R (2 ea.) The Spanish-American Novel
656 (2) Modernista Prose and Poetry
658 (2) Hispanic-American Short Story

Latin American Studies
690R (1-3 ea.) Interdisciplinary Seminar on Contemporary Latin American Problems

Political Science
501R (3 ea.) Advanced Topics (course designed to meet the needs of Latin American students)

Sociology
590R (1-3 ea.) Special Topics in Sociology (courses designed to meet the needs of Latin American students)

Courses

495. Senior Seminar in Latin American Studies. (3:3:0) Prerequisite: consent of instructor for minors.

Sources, materials, and methods of research and writing, including critical analysis of a research project. Required for all Latin American Studies majors in the senior year.

690R. Interdisciplinary Seminar on Contemporary Latin American Problems. (1-3:0:0 ea.) Prerequisite: consent of instructor.

698R. Latin American Studies 698R. Project. (1-6:Arr.:Arr. ea.) Prerequisite: graduate standing in Latin American Studies.

Project serves as alternative to thesis for master's degree.

699R. Master's Thesis. (6-9:Arr.:Arr. ea.)

Law Enforcement and Justice Administration

See Government, Justice Administration.

Law School

For information concerning admission requirements and application dates, refer to the Schools section of this catalog.

Courses

500. Legal Profession. (1:0:0)

505. Torts 1. (5:5:0)

Judicial process in civil actions for damages or equitable relief for physical, appropriational, and defamatory harms to personality, property, and relational interests.

506. Torts 2. (3:3:0)

Continuation of Law 505.

510. Contracts 1. (5:5:0)

Kinds of promises enforced by law and the nature of protection given.

511. Contracts 2. (3:3:0)

Continuation of Law 510.

515. Civil Procedure 1. (3:3:0)

Basic study of the operation of courts, including an introduction to the organization of state and federal courts and relationships between them.

516. Civil Procedure 2. (3.3:0)

Continuation of Law 515

520. Real Property 1. (3:3:0)

Nature of "property" and "ownership" of land and structures on land, and the ways in which ownership may be established, restricted, transferred, and divided.

521. Real Property 2. (3:3.0)

Continuation of Law 520.

525. Criminal Law. (3:3:0)

Problems in defining what conduct should be subjected to criminal penalties; limitations of criminal law as a means for prevention and control of undesirable conduct.

526. Criminal Procedure. (3:3:0)

Problems in administering a system of criminal law; constitutional and policy limitations upon public officers in dealing with suspected, charged, and convicted offenders.

530. Introduction to Law. (1:1:0)

Intensive one-week course prior to beginning of regular Fall Semester. Law processes and the adversary system. Nature and purpose of the methods used during first year of law study.

535. Legal Research and Writing 1. (1:1:0)

Training and practice in the skill of legal research and writing.

536. Legal Research and Writing 2. (1:1:0)

Continuation of Law 535.

601. Accounting for Lawyers. (3:3:0) Prerequisites: first-year law courses.

602. Administrative Law. (3:3:0)

The administrative process. Formal and informal decision making, emphasizing the powers and procedures common to all administrative agencies.

605. Antitrust. (3:3.0) Prerequisites: first-year law courses.

The development of legal doctrine under the Sherman Act and supplemental legislation.

610. Business Associations. (3:3.0) Prerequisites: first-year law courses

Law relating to business enterprises, including the partnership and the corporation.

611. Advising Closely Held Businesses. (2:2:0) Prerequisites: first-year law courses and Law 610, 640, and 641

Advanced work in partnerships, corporations, and federal taxation in the context of business planning and counseling

613. Classics and the Law. (3:3.0) Prerequisites: first-year law courses.

614. Combining and Reorganizing Corporate Businesses. (3:3:0) Prerequisites: first-year law courses Law 610, 640, and 641.

Coverage of the tax, corporate, antitrust, and securities law aspects of corporate acquisitions, mergers, consolidations, and reorganizations.

615. Commercial Law 1. (3:3:0) Prerequisites: first-year law courses.
Legal problems that arise in the distribution of goods, emphasizing provisions of the Uniform Commercial Code.

616. Commercial Law 2. (3:3:0) Prerequisites: first-year law courses.
Continuation of Law 615.

617. Comparative Law. (3:3:0) Prerequisites: first-year law courses.
Introduction to legal systems other than the common law tradition, emphasizing the civil law tradition.

618. Community Property. (2:0:0) Prerequisites: first-year law courses.

619. Conflict of Laws. (3:3:0) Prerequisites: first-year law courses.
Rules applied by courts in recognizing and enforcing rights involving elements which occurred in a sister state or foreign country.

620. Constitutional Law 1. (3:3:0) Prerequisites: first-year law courses.
Judicial review, justiciability, sources of limitations on national and state power, interstate commerce, intergovernmental relationships within the federal system, separation of powers, matters of foreign affairs, and national defense.

621. Constitutional Law 2. (3:3:0) Prerequisites: first-year law courses.
Judicial history of Bill of Rights, substantive and procedural due process, equal protection, freedom of association and expression, and free exercise and establishment of religion.

623. Debtors' and Creditors' Rights. (1-3:3:0) Prerequisites: first-year law courses.
Collection remedies ordinarily available to creditors, enforcement of judgments, attachments, garnishments, fraudulent conveyances, assignments for the benefit of creditors, and bankruptcy.

624. Environmental Law. (3:3:0) Prerequisites: first-year law courses.
Private and public pollution control and judicial review of the decision-making processes affecting the environment. Major environmental legislation and assessment of environmental law.

625. Evidence. (4:4:0) Prerequisites: first-year law courses.
Admissibility, competency of witnesses, and the function of lawyer, judge, and jury in the presentation and evaluation of evidence.

626. Economy, Society, and the Law. (3:3:0) Prerequisites: first-year law courses.

631. Advanced Estate Planning 1. (3:3:0) Prerequisites: Law 640, 641, and 666.
Examination of the effective disposition of wealth by inter vivos gift and testamentary transfer.

632. Family Law. (2:2:0) Prerequisites: first-year law courses.
The role of law, its objectives, and forces shaping it related to the creation, regulation, and dissolution of the family.

635. Federal Courts. (2:2:0) Prerequisites: first-year law courses.

638. Introduction to Contemporary Legal Theory. (2:2:0) Prerequisites: first-year law courses.
Contemporary efforts in philosophical, legal, and social theory to discern the moral foundation of legal institutions and values.

639. International Business Transactions. (3:3:0)
Current legal problems in international trade and investment. Transnational reach of national legal systems.

640. Federal Taxation 1. (4:4:0) Prerequisites: first-year law courses.
Federal personal income tax, with an introduction to business and corporate income tax and federal tax procedure.

641. Federal Taxation 2. (4:4:0) Prerequisites: first-year law courses; and completion of or concurrent enrollment in 610.
Federal income tax consequences from the creation, operation, merger, dissolution, and sale of partnerships and corporations.

642. Intellectual Property Law. (2:2:0) Prerequisites: first-year law courses.

645. Indian Law. (2:2:0) Prerequisites: first-year law courses.

646. Jurisprudence. (3:3:0) Prerequisites: first-year law courses.
Historical examination of the development of legal philosophy from ancient times to the present.

647. International Organizations. (3:3:0) Prerequisites: first-year law courses.
Operation of such international organizations as the United Nations, International Court of Justice, UN specialized agencies, the European Community, and NATO.

649. Externing Program. (Arr.) Prerequisite: special approval from Law School.
Directed work outside the Law School for which credit is given.

650. Land Finance and Development. (3:3:0) Prerequisites: first-year law courses.
Public and private means of regulating land use: planning, zoning, urban renewal and rehabilitation, subdivision control, and preservation of open spaces.

651. The Legal Process. (2:2:0) Prerequisites: first-year law courses.

652. Legislation. (2:2:0) Prerequisites: first-year law courses.

653. Law, Consciousness, and History. (3:3:0) Prerequisites: first year law courses.
Examination of the coalescence and eventual disintegration of the system of legal formalism that dominated American legal conciousness during the late nineteenth and early twentieth centuries.

654. Legal History and Legal Thought. (3:3:0) Prerequisites: first-year law courses.
Traces the evolution of three distinct modes of legal consciousness that have played a central role in American legal history.

655. Labor Law. (3:3:0) Prerequisites: first-year law courses.

656. Public Land Law. (2:2:0) Prerequisites: first-year law courses.

657. Labor Law 2. (3:3:0) Prerequisites: first-year law courses.
Specialized labor problems such as the responsibilities of the union to its members, the requirements of Title VII, and the Occupational Safety and Health Act.

658. Land Use Planning. (3:3:0) Prerequisites: first-year law courses.
Limitations imposed upon the use of privately owned land by public action—includes the master plan, official map, subdivision regulation, zoning, and urban redevelopment.

659. Public International Law. (3:3:0) Prerequisites: first-year law courses.

660. Professional Responsibility. (2:2:0) Prerequisites: first-year law courses. ,

661. Religious Problems and the Law. (2:2:0) Prerequisites: first-year law courses.

662. Securities. (3:3:0) Prerequisite: Law 610.
Problems under the Securities and Exchange Act and other federal and state regulatory measures; operations of the S.E.C.

663. State and Local Government. (2:2:0) Prerequisites: first-year law courses.

664. Taxation of Natural Resources. (3:3:0) Prerequisites: first-year law courses.
Income tax aspects of the acquisition, development, operation, and disposition of natural resource properties.

665. Trusts. (2:2:0) Prerequisites: first-year law courses.
Legal framework of private and charitable trusts as vehicles for the donative disposition of accumulated wealth.

666. Wills, Estates, and Estate and Gift Tax. (4:4:0) Prerequisites: first-year law courses. Recommended: concurrent enrollment in Law 665.
Family wealth transmission problems, wills and will substitutes, the probate process, and federal estate and gift tax.

667. Roman Law. (2:2:0) Prerequisites: first-year law courses.
Sources of Roman law and the Roman law of persons, property, contracts, delicts, succession, and actions; and the second life of the Roman law.

668. The Lawyer as a Professional: Negotiation and Pre-Trial Advocacy. (3:3:0) Prerequisites: first-year law courses.
Process of legal bargaining as the primary means of settling legal disputes.

669. Public Employment Labor Relations. (2:2:0) Prerequisites: first-year law courses.
Structure of collective bargaining in the public (governmental) sector in the United States.

670. Advanced Real Estate Transactions. (2:2:0) Prerequisites: first-year law courses.
Consideration of legal, tax, and financial aspects of certain types of real estate developments.

671. Oil and Gas Law. (2:2:0) Prerequisites: first-year law courses.
Nature of interests in oil and gas, the oil and gas lease and associated problems, title and conveyancing problems, and polling and unitization.

673. Legal Intellectual History. (2:2:0) Prerequisites: first-year law courses.
Relationship of law and changing consciousness in Western civilization during the 19th and 20th centuries.

674. Law Office Management. (2:2:0) Prerequisite: senior status.
Efficient organization, time accounting and billing practices, client relationships, and developing filing systems.

677. Regulated Industries. (3:3:0) Prerequisites: first-year law courses.
Law as it affects the transportation, communications, gas and electric power companies. Analysis of economic rationale for the regulatory criteria applied.

678. Sex Discrimination and the Law. (2:2:0) Prerequisites: first-year law courses.
Special status of women in the law historically; development of legislative, judicial, and administrative policies and practices designed to prevent discrimination against women.

679. Problems in the Philosophy of Law. (3:0:0)
Focuses on two specific problems in legal philosophy—morality and the law, and judicial reasoning—as perspectives for inquiry into the nature of the law.

680. State and Local Taxation. (2:2:0) Prerequisites: first-year law courses.
State aspects of personal income taxes. Corporation franchise and income taxes. Sales and use taxes. Property taxes. Restrictions on state and local taxation.

681. Tax Procedure. (2:2:0) Prerequisites: first-year law courses and Law 640.
Administrative and judicial procedures relating to federal taxation and how these procedures can be applied most effectively to solving specific tax problems

682. Trade Regulations. (3:3:0) Prerequisites: first-year law courses.
Price and service discrimination under the Robinson-Patman Act—false advertising and deceptive practices—trademarks, trade names, and imitation of product appearance.

684. Water Law. (3:3:0) Prerequisites: first-year law courses.
An examination of the substantive law with respect to water resources.

686R. Special Topics in Law. (2:0:0 ea.) Prerequisites: first-year law courses.

687R. Special Topics in Law. (2:0:0 ea.) Prerequisites first-year law courses.

690R. Directed Research. (1-2:0:0 ea.)

691R. Directed Readings. (1-2:0:0 ea.)

692R. Cocurricular Programs. (1:0:0 ea.)

695R. Law School Seminars. (Arr :0:0 ea.) Prerequisites: first-year law courses; additional prerequisites vary according to seminar topic.
Topics vary.

696R. Law School Seminars. (Arr :0:0 ea.) Prerequisites: first-year law courses.

Library and Information Sciences

Professor: Marchant.
Associate Professors: Johnson, Lamson, Smith, Wright.
Assistant Professors: Purdy, Shields, Stirling.

Undergraduate Programs

Two undergraduate programs are offered. a library technician program leading to an Associate of Science degree, and a program to prepare applicants to be certified as school library media specialists.

Associate of Science Degree (Library Technician)

Supervisor: K. Paul Jordan, 6210 HBLL.

Many positions in modern-day libraries can best be filled by library technicians. These positions occur in purchasing, circulation, cataloging, and reference. Students completing the library technology program are prepared to work in public, college, university, and industrial libraries and in specialized reseach and information centers. Also, there is a trend toward adding library technicians to the school library staff and using these people to work as media specialist assistants The following is a suggested sequence of courses for an associate degree in library technology. Refer to the general education programs section for additional requirements

	Credit Hours	
First Year	**F**	**W**
LIS 111; InsSci. 455	1	2
LIS 201, 202	3	3
BusEd 101*, 203	2	2
Second Year		
LIS 211, 212	3	3
LIS 213		1
BusEd. 204	2	
BusEd. 320, 275	3	4

*If students have had typewriting in high school, they need not take the beginning class.

Effective hours not committed to general education requirements might profitably be spent in course work from one or more of the following areas: Acctg. 201; ElEd. 340; a foreign language (8 hours); BusEd. 111, 305, 340; Engl. 337, 420; ComSci. 105, 110; Comms. 100, 211; GenSt. 121; CDFR 130; Stat. 100; ThCA 360, 527.

School Library Media Specialist

Certification to work as a school library specialist in Utah requires a teaching certificate and an instructional media endorsement that meets the standards of the Utah State Board of Education. At Brigham Young University, the Department of Instructional Science in the College of Education cooperates with the School of Library and Information Sciences in providing courses adequate to fulfill the endorsement. The state recognizes two levels in instructional media: the Basic Professional Certificate, which is available as part of an undergraduate educational program, and the Professional Certificate, which requires a master's level program plus professional educational experience. Undergraduates certifying in secondary education may take a teaching minor in instructional media through which they may fulfill the basic endorsement. Interested students are referred for advice regarding either level of certification to the School of Library and Information Sciences or the Department of Instructional Science.

Graduate Program

Program. Master of Library Science (MLS).

Application Consideration Dates. Same as Graduate School deadlines.

Entry Times. Any regular registration except at Spring Term.

Required Courses. LIS 500, 513, 523, 525, 530, 534, 536, 538, 696R, 697. Additional courses to total a minimum of 38 hours will be chosen in consultation with an adviser. LIS 500 and 534 should be taken the first semester. Elective courses may be chosen from LIS offerings or from other departments on campus, depending upon the students' objectives and with the approval of their faculty adviser.

Requirements. 38 semester hours (a minimum of one calendar year). Some prerequisites may be required. An examination and a research project are required.

Additional Requirements. In addition to course work, attendance at a number of informal lectures without credit is required of all students each semester. These colloquia are intended to broaden the student's outlook on librarianship and related fields through presentations by outstanding guest lecturers.

New York bookman S. R. Shapiro and his wife, Anita, have established a gift of a $100 U.S. Savings Bond to the outstanding graduate each year. This may be awarded as two $50 bonds to two outstanding students.

An endowment established in honor of Hattie M. Knight, upon her retirement as an associate professor in 1973, funds an award to the student who has shown the greatest improvement over the course of the program.

Courses

111. How to Use the BYU Library. (1:2:0 for half term)
Efficient use of library materials, card catalog, general reference books (bibliographies, dictionaries, encyclopedias, and indexes); and making bibliographies.

201. Introduction to Libraries (IMC). (3:3:0)

202. Organization of (IMC) Materials. (3:3:0)

211. Acquisitions of Library (IMC) Materials. (3:3:0)

212. Work with Library (IMC) Users. (3:3:0)

213. Supervised Library (IMC) Practice. (1:0:2).

430. Organization and Processing of Material in the School Media Center. (3:3:0)
Principles, criteria, and practice in processing of book and nonbook materials. Restricted to school media specialists seeking endorsement.

500. Foundations of Library and Information Sciences. (2:2:0)
Principles and concepts underlying the cultural, intellectual, and historical foundations of library and information sciences.

513. Selection and Acquisition of Materials. (3:3:0)
Principles, criteria, and practice in evaluation, selection, and acquisition of book and nonbook materials.

523. Reference Theory and Service. (3:3:0)
Intensive study of basic reference materials and services, including general bibliographic tools and form.

525. Intellectual Access to Collection—Processing Systems. (2:2:0)
History and development of cataloging.

530. Philosophical and Professional Bases of Librarianship. (2:2:0)
Epistemological, historical, professional, and philosophical bases of library and information sciences.

534. Research in Library and Information Sciences. (2:2:0)
Bases, methods, and techniques of research. Experience in manipulating data, using statistical computer programs. Research project.

536. Library Organization and Administration. (3:3:0) Prerequisite: LIS 500.
Organizational and administrative theory and problems associated with personnel, authority, policy, planning, reports, standards, etc.

538. Documentation and Information Retrieval. (3:3:0)
Nonconventional and experimental methods and devices for cataloging, indexing, and retrieving; data processing and the library.

539. Practicum in Librarianship. (1:1:0) Prerequisites: completion of or concurrent registration in LIS 500, 513, 523, and 525.
Thirty hours of practice work under the supervision of a professional librarian. Required.

543. Literature of the Social Sciences. (2:2:0)
Analyzing subject concerns, methodology, and unique information needs of the social science fields; examining literature and problems of bibliographic control.

545. Literature of the Humanities. (2:2:0)
Analyzing subject concerns, methodology, and unique information needs of the humanities fields; examining literature resources and problems of bibliographic control.

547. Literature of the Sciences. (2:2:0)
Analyzing subject concerns, methodology, and unique information needs of the fields of science; examining literature resources and problems of bibliographic control.

557. The Instructional Media Center in the School. (3:3:0)
Place of the IMC in the educational program; standards, management, equipment, budget, and services.

567. Library Services for the Young Adult. (2:2:0)
Critical study of reading interests and library needs of young adults.

580R. Workshop: Current and Special Problems. (1-2:1-2 weeks:40-50 hrs. per week ea.)

594R. Special Topics in Library Science. (1-3:1-3:0 ea.)
Directed by visiting or resident faculty. Topics vary.

596. Advanced Information Science. (3:3:0)
Formal methods of intellectual access to documents. Automatic content analysis. Classificatory query strategy, relevance, and similar concepts and techniques.

614. Literature of Mormonism. (2:2:0)
Intensive survey of its selection, organization, and use in libraries.

624. Government Publications. (2:2:0)
Intensive study of documents published by federal, state, and local governments and the U.N., emphasizing selection, organization, and use in different types of libraries.

625. Organization and Processing of Materials. (3:3:0) Prerequisite: LIS 525.
Principles and practice of documenting book and nonbook materials through classification and cataloging.

628. History and Theory of Manuscription. (2:2:0)
Development of written communications and librarianship in the ancient world.

632. History and Theory of Printing. (2:2:0)
Development of printed communications and librarianship in the modern world.

633. Advanced Library Administration. (3:3:0)
Applying such modern concepts as systems theory and participative management to library organizational behavior.

642. Seminar: Advanced Reference and Bibliography. (2:2:0)
Types of bibliography, advanced bibliographic techniques, administrating reference services, analysis of research problems. Librarian-user interface.

645. Seminar: Classification Theory. (2:2:0)
Philosophical and theoretical bases of classification and cataloging.

656. Information Systems Analysis and Library Automation. (3:3:0)
Operations research techniques and data processing in all areas of librarianship.

662. Trends in Library Services for Children. (2:2:0)
Historical development of children's libraries, materials, and services; publishers, illustrators, and authors; and relationship to sociological, educational, and philosophical forces of various periods.

668. Seminar: Library User Interface. (2:2:0)
Patterns of behavior in the librarian-user interface involving communication and information transfer.

694R. Independent Research. (1-2:Arr..0 ea.)

696R. Research Seminar. (2:2:0 ea.)

697. Project Seminar. (2:2:0)

☐ **Communications 335. Public Relations.** (3:3:0)

☐ **Communications 610. Studies in Communication Theory.** (3:3:0)

☐ **Computer Science 351. Information Structures.** (3:3:1)

☐ **Computer Science 451. Information Systems Analysis.** (3:3:2)

☐ **Elementary Education 340. Children's Literature.** (2:2:0)

☐ **Elementary Education 628. Children's Literature.** (2:2:0)

☐ **English 420. Literature for Adolescents.** (2:2:0)

☐ **Instructional Science 455R. Instructional Media Production and Management.** (½-3:½-3:Arr. ea.)

☐ **Instructional Science 555. Instructional Media in the School.** (3:2:3)

☐ **Instructional Science 556. Selection and Utilization of Instructional Materials.** (2:2:0)

☐ **Instructional Science 660. Management of Instructional Media Systems.** (2:2:0)

☐ **Instructional Science 670. Advanced Design and Production of Instructional Materials.** (2:2:1)

☐ **Statistics 501. Statistics for Research Workers I.** (5:4:3)

☐ **Statistics 502. Statistics for Research Workers 2.** (5:4:3)

☐ **Theatre and Cinematic Arts 527. Storytelling.** (2:2:0)

Linguistics and Special Languages

Professors: Blair, Cox, Madsen, Otto.
Associate Professors: Baird (Chairman, 157 FB), Lytle.
Assistant Professors: Melby, Robertson.
Instructors: Brown, Pack.

The Linguistics Department is responsible for the following academic programs:

- Linguistics
- Teaching English as a Second Language
- American Indian Languages
- Middle-Eastern Languages

Undergraduate Program

There is no undergraduate degree offered by the Linguistics Department. Both the linguistics program and the TESL program are graduate programs. There are available, however, undergraduate minors in both areas (see following information).

Linguistics Section

The linguistics program is a graduate program leading to the Master of Arts degree in theoretical or applied linguistics. It is designed to provide specialized training in linguistic science, with emphasis on either the description of linguistic structure (theoretical linguistics) or language teaching and learning problems (applied linguistics). For a description of the requirements for the M.A. in theoretical or applied linguistics, see the following section under Graduate Program.

Although no baccalaureate degree in linguistics is currently offered, a broad range of undergraduate course work in English and foreign languages as well as in linguistics is available. For an undergraduate minor in linguistics, 14 hours of department-approved course work are required.

Graduate Program

Program. Master of Arts (M.A.).

Entry Times. Fall Semester recommended.

Master of Arts in Linguistics

Prerequisites: (1) 5 credits in upper-division linguistics; (2) intermediate-level competence in two foreign languages (201 or equivalent) or high-level competence in one foreign language (321 or equivalent).

Fields. Applied linguistics, theoretical linguistics.

Minors Permissible. Any established minor in the humanities or the sciences; Option 2.

Requirements. Minimum of 25 semester hours plus thesis (6-hr. min.—699R).

Required Courses. Ling. 525, 528, 693R.

Linguistics Courses

205. Introduction to Language. (3:0:0) (G-HA)
Language in its nontechnical aspects

210. Language Learning for Prospective Missionaries. (3:3.1)
Minicourse experience with language and culture

learning. Exploring ways to learn languages efficiently.

301R, 302R. Audio-Lingual Study of an Uncommon Language. (4:0:0 ea.)
Different languages not commonly offered in University curricula taught on demand: Oceanic, American Indian, East European, Asiatic, African. Only 302 will carry credit toward a major or minor in linguistics.

324. Introduction to Linguistics (Traditional). (3:3:0)
History of language study, writing systems, phonetics, dialects, language history, and language acquisition.

325. Introduction to Linguistics (Modern). (3:3:0)
Morphology, syntax, semantics, and phonology.

423. Language Learning. (3:3:0)
First- and second-language acquisition viewed in light of psycholinguistics and sociolinguistics.

426. Junction Grammar. (3:3:0) Prerequisite: Ling. 325.
Lytle's theory of semanto-syntactic structure.

481R. Problems in Translation. (2:2:0 ea.) Prerequisites: consent of instructor and proficiency in a second language.
History, theory, and practice of human and machine translation.

501. Advanced Junction Grammar. (3:3:0) Prerequisite: Ling. 426 or consent of instructor.
Identification and representation of special subtypes of adjunction, conjunction, and subjunction; frames of reference; orders of specificity in grammatical description; analysis of English prose.

525. Generative Phonology. (3:3:0) Prerequisite: Ling. 325.
Techniques for analyzing phonological data and preparing phonological statements through order rules.

526. Junction Grammar Phonology. (3:3:0) Prerequisite: consent of instructor.
Criteria for constructing a phonological analogue of the human speaker-hearer; acoustic versus articulatory description: words and phrases as articulation trees; interaction of syntacto-semantics and phonology.

527. Writing Transformational Grammars. (3:3:0) Prerequisite: Ling. 325.
Introduction to transformational syntax. Techniques of syntactic analysis and preparation of grammatical statements.

528. Syntactic Theory. (3:3:0) Prerequisite: Ling. 527.
Theory of transformational grammar, including its history and recent extensions of the theory as seen in case grammar, generative semantics, etc.

529R. Linguistic Structures. (3:3:1 ea.) Prerequisite: consent of instructor.
Consideration and comparison of the phonological and morphological structures of several non-Indo-European languages. Students work with native informants.

531. Sociolinguistics. (3:3:0) Prerequisite: consent of instructor.
Research and theory in anthropological linguistics and sociolinguistics.

590R. Readings in Linguistics. (1-3:Arr.:0 ea.)
Individual study of current linguistic literature. Occasional discussion sessions with instructor and other class members.

599R. Cooperative Education. (1-12:12:0 ea.) Prerequisites: Ling. 325 and TESL 477 or foreign culture experience or foreign language experience.
On-the-job experience.

623R. Problems in Contrastive Linguistics. (3:3:0 ea.) Prerequisite: consent of instructor.
Contrast of structures in English and selected languages and the development of grammatical description from these contrasts.

626. Problems in Historical Linguistics. (3:3:0) Prerequisite: consent of instructor.

693R. Seminar in Linguistics. (2:2:0 ea.) Prerequisite: Ling. 528.
Advanced research and analysis of various linguistic problems.

699R. Master's Thesis. (1-6:Arr.:0 ea.)

English as a Second Language Section

Programs

Undergraduate TESL minor (20 hours), graduate certificate in teaching English as a second language (major and minor), Master of Arts in teaching English as a second language (major and minor).

Entrance Examination Required. None required for native speakers of English. Satisfactory TOEFL score required for non-native speakers of English plus an English proficiency exam administered by the Linguistics Department.

Application Consideration Dates. Same as Graduate School deadlines.

Entry Times. Fall Semester strongly recommended.

Fields. Graduate certificate in TESL; master's degree program (teaching emphasis, materials development, supervision-administration, bilingual-bicultural).

Undergraduate Program

While all undergraduate students at BYU are required to satisfy the University English composition requirements as given in the general education programs section of this catalog, additional courses are provided for nonnative speakers of English:

ESL 101—a remedial class providing an oral review of English fundamentals.
ESL 102—a course for writing improvement.
ESL 103—a small-group, tutorial course to improve spoken English (pronunciation and intonation) and listening.
ESL 104—a course to improve reading comprehension and reading speed.

These classes are open to both undergraduate and graduate nonnative speakers of English.

Placement in the above classes is determined by a BYU foreign-student test administered just prior to the beginning of each semester. Normally, 101 is a prerequisite for 102; however, 103 and 104 may be taken concurrently with either 101 or 102.

Undergraduate Minor in ESL (20 hours)

Prerequisites: (Admission to Brigham Young University and acceptance by Linguistics Department.

Native speakers of English must successfully complete one year of college course work in a modern foreign language or be able to demonstrate proficiency in such a language through an approved examination.

ESL 201 (3 hours) is required of all nonnative speakers of English who desire to teach English as a second language yet lack sufficient language competency for that task.

Requirements: Successful completion of 20 hours of required and elective course work as outlined below:

Ling. 325 or Engl. 321, ESL 477, 524 (usage), Ling. 423, Engl. 320, plus 4 hours of approved elective credit credit

(ESL has been approved as a teaching minor)

Note: A maximum of 7 credit hours of work in the undergraduate minor can be carried over and applied towards a Graduate ESL Certificate.

Graduate Programs

Graduate Certificate in TESL

BYU's ESL certificate (not to be confused with state teacher certification) is designed to prepare teachers for overseas English programs as well as for stateside English assignments teaching foreign students.

Nature of the Program. Instruction is more applied than theoretical, incorporating a balanced offering of English language classes, practical professional courses, and supporting offerings. In addition to the course work, a practical paper is required. Those taking an undergraduate ESL minor at BYU may apply a maximum of 7 hours of that credit toward the ESL Certificate.

Prerequisites. Graduation from an accredited four-year university and acceptance by the Brigham Young University Graduate School.

Undergraduate Preparation. Applicants must have intermediate-level proficiency in a modern foreign language. Persons without foreign language training are permitted to fill this requirement concurrently with ESL graduate courses. Ling. 325 or Engl. 321 is a prerequisite to beginning course work for the TESL Certificate. Each student entering the program will be required to take the Tennessee Self-Concept Test and the 16 PF Test. (Both are available on campus at the testing center, at no cost to the student.)

Required Courses. ESL 477, 527, 528, 524, 595; Engl. 529. ESL 201 (3 hours) is required of all nonnative English speakers who desire to teach English as a second language yet lack sufficient language competency for that task.

Requirements. One major paper, and a satisfactory score on a written comprehensive examination.

Special Provisions in Connection with Professional Course Work. The graduate TESL programs (Certificate and M.A.) have been accepted by the Utah Board of Education as accredited teaching majors for secondary education students. Those students seeking teacher certification on a secondary level may obtain further information on this option by contacting the Linguistics Department.

Those who have completed student teaching in an area other than ESL are still required to complete two hours of student teaching in English as a second language. Anyone who has successfully taught English as a second language one or more years in an accredited American elementary or secondary school may be considered for exemption from this requirement.

Master of Arts in TESL

Prerequisites. All students entering the TESL M.A. program will be expected first to complete the graduate TESL certificate requirements. These include a comprehensive exam upon completion of 18 hours of required course work and one major paper (possibly written in conjunction with one of the courses). Those students who score well on the comprehensive exam and wish to continue for a master's degree must then have an interview with a review board in order to determine their qualifications to enter the M.A. program.

Requirements. (1) 18 hours of course work beyond the certificate, with a concentration in one of the four areas of emphasis identified below. (2) A student may elect to write two additional major papers for the M.A. or write a thesis. Those writing a thesis may fill their elective credit hours with thesis credit. (3) All candidates for the M.A.degree must pass an oral examination at the conclusion of their program.

Areas of Emphasis

Teaching. ESL 677, 678, 695, 600, 698, and electives*

Administration. ESL 677, 678, 684, 697, 698, and electives*

Materials Development. ESL 678, 600, 601, 698; InSci. 556, 565; and electives*

Bilingual. ESL 667, 668, 663, 695, 698, and electives*

*Elective credit must be approved by the Linguistics Department.

Minors Permissible. By its very nature, the M.A. TESL degree normally precludes a minor. The specialized training in pedagogy and language structure and phonology and the practicum in student teaching place demands on the student such that it is not possible to include a graduate minor within the 30-36 hours of course work identified for a master's degree. Any minor taken must involve hours beyond the 36 required by the degree.

Courses

101. English as a Second Language (Structure). (4:5:0)
Mastery of English sentence structure through oral and written exercises and controlled composition. For bilingual foreign students.

102. English as a Second Language (Writing). (3:3:2)
Transition from controlled to free writing, emphasizing expository prose. For bilingual foreign students.

103. English as a Second Language (Oral-Aural). (2:3:1)
Improving listening comprehension and speaking ability. Emphasizes fluency, correct pronunciation, and intonation. For bilingual foreign students.

104. English as a Second Language (Reading). (4:3:2)
Improving reading comprehension and reading speed. For bilingual foreign students.

201. ESL Advanced Composition and Oral Production. (3:3:2) Prerequisites: ESL 102 or score of 101 on reading and structure sections of ESL Diagnostic Test.
Composition, rhetoric, usage, and mechanics, plus developmental work in oral production.

477. Introduction to ESL Methodology. (4:4:1) Prerequisite: ESL 201 or native English speaker.
Instruction in basic second language methodology, ESL teaching techniques, and materials selection. Observing actual ESL classes.

523. Teaching Culture. (3:3:0)
Experience developing materials and activities dealing with typical patterns of U.S. life-style. Variety of readings.

524. Grammar Usage. (3:3:0)
Examining English grammar and usage as they reflect different theories about language description and applying this knowledge in the ESL classroom.

527. Phonology of Modern English. (3:3:0) Prerequisite: Engl. 321 and 325 or equivalent.
Articulatory phonetics (phonemics), intonation, and contrastive analysis of English sounds with those of other languages.

528. Phonology Practicum-TESL Laboratory. (3:3:0) Prerequisite: ESL 527.
Practical experience in applying phonological principles. Preparing materials for tutorial sessions and doing presentations in a classroom situation.

579. TESL Student Teaching. (2:0:8) Prerequisite. consent of department.
On-the-job training.

596. TESL Field Study. (1-2:1-2:0)
Individual research projects for TESL Graduate Certificate candidates, culminating in a practical paper.

600. TESL Testing. (3:3:0)
Preparing and evaluating language tests and carrying out fundamental statistical processes

601. Bibliography and Research. (1:1:0)
Procedures for developing research projects and reporting on their results; priority given to major papers and M.A. thesis projects.

663. Bilingual Trends and Issues. (3:3:0) Prerequisite: consent of instructor.
Teaching culture in bilingual programs. Trends and issues in bilingual-bicultural education. Required for TESL graduate students pursuing bilingual emphasis.

667. Bilingual Methodology. (3:3:1) Prerequisite: ESL 477.
Various methodologies.
Required for TESL graduate students pursuing bilingual emphasis.

668. Bilingual Materials Development. (3:3:1) Prerequisite: ESL 477.
Developing supplementary materials for teaching ESL in bilingual programs. Required for TESL graduate students pursuing bilingual emphasis.

677. Advanced Methodology. (3:3:3) Prerequisite: ESL 477.
Advanced ESL methodology and its classroom application.

678. Materials Development. (3:3:0) Prerequisite: ESL 477.
Evaluating and adapting texts, exercises, games, and supplementary teaching aids and developing tapes.

683. TESL Literature. (3:3:0)
Teaching literature to non-native English speakers, both TEFL and TESL.

684. TESL Supervision-Administration. (2:2:0) Prerequisite: ESL 579 or equivalent.
Ministerial language, policies, teacher selection and preparation, and program development and direction.

685R. Problems in Teaching English as a Second Language. (3:3:0 ea.)
Coping with ESL problems of linguistic and social convention.

695. Teaching Internship. (2:0:0) Prerequisite: consent of department.
For TESL graduate students pursuing an M.A.

697. TESL Supervision-Administration Internship. (4:0:approximately 25 hours per week for one-half semester) Prerequisite: ESL 684 or consent of instructor.
Actual fieldwork in TESL settings, involving supervision, in-service training, curricula-program study and administration.

698. TESL Seminar. (2:2:0) Prerequisites: completion of majority of ESL courses; consent of instructor.
Integrating TESL theory and practice, research, and comparative methodology.

Middle Eastern Languages

Arabic Courses

101, 102. First-Year Arabic. (4:4:0 ea.)
Designed for those who have had no Arabic. Pronunciation, reading, fundamentals of grammar, emphasizing conversation.

201. Second-Year Arabic. (4:4:0)
Reading, review of grammar, conversation, vocabulary building.

Egyptian Courses

301, 302. Introduction to Middle Egyptian. (3:3:0 ea.)
Language of ancient Egyptian hieroglyphic writing.

311R. Selected Readings. (3:3:0 ea.)
Reading in original hieroglyphic texts.

Farsi (Persian) Courses

***101A,B. First-Year Farsi** (2:2:0 ea.)
Basic language skills.

102. First-Year Farsi. (4:4:0)
Basic language skills.

***201. Second-Year Farsi.** (4:4:0) Prerequisites: Farsi 101 and 102 or foreign residence experience.
Conversation, vocabulary building, and reading and writing skills, emphasizing reading.

***211. Second-Year Conversation.** (2:2:0) Prerequisite: Farsi 201 or foreign residence experience.
Intermediate listening comprehension and speaking skills.

***311. Third-Year Conversation.** (2:2:0) Prerequisite: Farsi 211 or foreign residence experience.
Advanced conversational skills.

*Credit by examination only.

Hebrew Courses

101, 102. First-Year Hebrew. (4:4:3 ea.)
Modern Hebrew as spoken in Israel today.

131, 132. First-Year Biblical Hebrew. (4:4:0 ea.) Home Study also.
Old Testament Hebrew.

201. Second-Year Hebrew. (4:4:3) Prerequisite: Hebrew 101, 102, or equivalent.

301. Selected Readings. (4:4:1) Prerequisite: Hebrew 201 or equivalent.

331. Readings in the Hebrew Old Testament. (4:4:0) Prerequisite: Hebrew 132 or 201 or consent of instructor.

531R. Studies in Hebrew. (2:2:0 ea.) Prerequisite: Hebrew 331.

American Indian Languages

Navajo Courses

101, 102. First-Year Navajo. (4:4:0 ea.)
Basic language skills.

201. Second-Year Navajo. (4:4:0) Prerequisites: Navajo 101, 102 or residence experience.
Conversation, vocabulary building, and reading and writing skills, emphasizing reading

211. Second-Year Conversation. (2:2:0) Prerequisite: Navajo 201 or residence experience.
Intermediate listening comprehension and speaking skills.

301. Advanced Navajo. (3:3:0) Prerequisite: Navajo 201.
Advanced grammar, reading, writing, and translation.

311. Third-Year Conversation. (2:2:0) Prerequisite: Navajo 211 or residence experience.
Advanced conversational skills.

Mathematics

Professors: Burton, Crawley (Chairman, 290 TMCB), Fearnley, Gee, Gill, Hansen, Higgins, Hillam, Jamison, Larsen, Moore, Peterson, Robinson, Snow, Wickes, Yearout.
Associate Professors: Armstrong, Campbell, Chatterley, Ferguson, Garner, Haupt, Skarda, Wight.
Assistant Professors: Garbe, Hurd, Lamoreaux, Pope, Tolman, Walter, Wynn.

The Mathematics Department offers courses leading to the following degrees: B.S. (in mathematics or in mathematics with various emphases), M.S. (in mathematics), B.A. and M.A. (in mathematics education).

To fulfill the old general education requirement in mathematics, statistics, logic, and science, students majoring in mathematics must take at least one course listed as acceptable for this purpose outside of the Department of Mathematics.

Undergraduate Program

Requirements for the Bachelor of Science Degree

Undergraduate students majoring in mathematics must present a program prepared in consultation with the Mathematics Department by the beginning of their junior year. They must complete this program with every grade a C or better. They must also pass a written comprehensive examination during the first semester of their senior year. Course requirements are Math. 141, 142 (or 112, 113), 190, 343, 344 (15 hours), and one of the following options:

Mathematics

1. Math. 332, 371, 541, and either 372 or 542 (12 hours
2. A minimum of 15 additional hours selected from Math. 300, 311, 313, 317, 350, 372, 387, and any 400- or 500-level mathematics course (no minor required)

Computational Mathematics

1. Math. 311, 315 or 541, 434 or 321, and 411 (12 hours)
2. Nine hours selected from Math. 323 or 436, 313, 314, 322, 350, 371, 372, 387, 451, 480, and any 500-level mathematics course
3. A minimum of 9 hours selected from ComSci. 131, 231 (or 232), 351, ElecEng. 220, 224, and Stat. 520, 521, 522, 541 (no major required)

Preprofessional Mathematics (for entry into professional schools such as law, management, medicine, dentistry, etc.). For specific requirements, refer to the Preprofessional Programs section of this catalog.

1. Math. 350 and 480
2. A minimum of 15 additional hours selected from Math. 300, 311, 332, 371, 372, 387, 411, 434 (or 321), 436 (or 323), 451, 452, and any 500-level mathematics course
3. A minor approved by the Mathematics Department in an area relevant to the student's career interest, or a minimum of 9 hours selected from Econ. 410, 486, 487, 488; ComSci. 131, 231 (or 232), 351; ElecEng. 220, 224; or Stat. 512, 520, 521, 541

Mathematics-Science (biomathematics, physicomathematics, sociomathematics).

1. Math. 315 or 541
2. One of Math 350, 434 (or 321)
3. A minimum of 12 additional hours selected from Math. 300, 311, 313, 314, 332, 350, 371, 372, 387, 411, 434, (or 321), 436 (or 323), 451, 452, 480, and any 500-level mathematics course
4. A course of study, of not less than 12 hours' credit, approved by the Mathematics Department, in one of the physical, biological, or social sciences. Detailed suggestions are available from the Mathematics Department office.

Mathematics-Philosophy

1. Math. 371, 541 or 315
2. Math. 508 or Phil. 305, and Phil. 505
3. Twelve credit hours selected from Math. 300, 372, 451, 501, 502, 542, 551, 552
4. Nine credit hours selected from Phil. 205, 311, 354, 355, 371R, 372R

A student with adequate high school preparation can complete the requirements for a B.S. in mathematics within a three-year period. One possible sequence of courses follows. Refer to the general education programs section of this catalog for additional requirements.

First Year	**F**	**W**	**Sp**
Math. 141, 142, 343 (or 112, 113, 343)	4	4	3
Math. 190	1		
Physics 121, 122	3	3	

Second Year	**F**	**W**	**Sp**
Math. 344, 332	3	3	
Math. 371, 372	3	3	
Mathematics elective			6

Third Year	**F**	**W**	**Sp**
Math. 541, 542	3	3	
Math. 350, 480	3	3	
Mathematics electives	3	3	3
RelC. 491R	1	1	

It may be possible to shorten the required time even further by using advanced placement credit or by attending Summer Term.

All students who contemplate pursuing graduate work in mathematics are urged to complete both Math. 372 and 542 and to gain competence in French, German, or Russian while an undergraduate.

Requirements for the Bachelor of Arts Degree in Mathematics Education

Undergraduate majors who wish to teach mathematics in secondary schools must present a program prepared in consultation with the Mathematics Department. They must complete their program with every grade C- or better. The following are required:

1. Math. 112, 113, 214; or Math. 141, 142, 344
2. Math. 301, 302, 343, 371
3. A minimum of 9 semester hours selected from the following: Math. 300, 311, 315, 332, 372, 387, 451, 452, 501, 502, 508, 541, 542, 551, 552
4. A teaching minor as described in the Secondary Education and Foundations section of this catalog
5. Complete the teacher certification requirements outlined by the Secondary Education and Foundations Department

Undergraduate Minors

A student who wishes to minor in mathematics must complete with every grade C- or better—

1. either of the sequences Math. 141, 142, 343, 344 or 112, 113, 214, 343; and
2. a minimum of 6 additional hours' credit in courses selected from the following: Math. 300, 315, 321, (or 434), 323 (or 436), 332, 350, 371, 372, 387, and any 400- or 500-level mathematics course.

Beyond the scholarships from regular University sources, the John Einar Anderson Scholarship is available to mathematics majors. For information, contact Leri Dawn Gee, administrative assistant, 292 TMCB, or the office of the Department of Mathematics

Graduate Program

Programs. Master of Science (M.S.), Master of Arts (M.A.).

Entrance Examinations Required. For foreign applicants, the Graduate Record Examination.

Application Consideration Dates. Same as Graduate School deadlines

Entry Times. Any regular registration

Master of Science

Prerequisites. Credit at least equivalent to the Brigham Young University requirements for a B.S. degree in mathematics. Also, a year's sequence in abstract algebra and one in advanced calculus.

Option 1

Minors Permissible. Any approved minor.

Requirements. Minimum of 18 semester hours of graduate mathematics, a minor (9 hrs.), plus thesis (6-hr. min.—699R).

Required Courses. Any 9 hours chosen from Math. 551, 631, 641, 671.

Option 2

Requirements. Minimum of 24 semester hours of graduate mathematics courses plus thesis (6-hr. min.—699R).

Required Courses. Three of the four sets: Math. 551, 552; Math. 631, 641; Math. 634, 647; or Math. 671, 672.

This program is designed to prepare students for (1) additional study and research in mathematics at the Ph.D. level, (2) employment in industry or government.

Master of Arts

Prerequisites. Credit at least equivalent to the current Brigham Young University requirements for a B.A. degree in education with a teaching major in mathematics, a B.A. degree in mathematics, or a B.S. degree in mathematics.

Minors Permissible. Option 1.

Requirements. Minimum of 24 semester hours plus thesis (6-hr. min.—699R), also state teacher certification. (Required certification courses may not be part of the graduate program.)

Required Courses. Math. 541, 542, 629. Any two-semester 600 sequence or Math. 551, 552.

This program is designed to prepare students for teaching mathematics in junior colleges or secondary schools.

Master of Arts in Mathematics Education

Prerequisites. In-service status as a secondary teacher of mathematics.

Minor Required. Education—12 hours.

Required Secondary Education and Foundations

SecEd. 536 (3) Secondary Curriculum Methods
SecEd. 636 (3) Secondary Curriculum and Methods: Design

Electives. Education

InSci. 555 (3) Instructional Media in the Schools
InSci. 582 (3) Measurement and Evaluations
SecEd. 601 (3) Comparative Current Educational Philosophy
SecEd. 606 (3) History of Education in Europe and America
SecEd. 608 (3) Social Foundations of Education
SecEd. 696R (1-4) Independent Research
SecEd. 727 (2) Curriculum of the Public Schools

Requirements. Minimum of 36 semester hours (12 hours' education, 24 hours' mathematics). Math. 629 and any seven courses selected from the following: Math. 300, 301, 302, 315, 332, 343, 371, 387, 451, or any 500- or 600-level courses. At least 20 hours of the credit for the master's degree must be in the 500 series or above. No thesis required.

Courses

97. Mathematical Review. (0:2:0) Prerequisite: previous registration in precalculus or calculus.

Review of mathematics through calculus. Primarily for returning missionaries and others. Offered on the block plan.

100. Elementary Mathematics.

Courses preparatory for college mathematics. Courses A, D, and F are primarily for students needing review of previously completed material, while courses B, C, and E are intended for students who have never taken equivalent courses. The Mathematics Laboratory is utilized according to individual student need.

Students register directly for the appropriate courses. The sequence ABC, or course D, is recommended as preparation for the general education Category I evaluation in Basic Mathematics Skills.

100A. Review of Arithmetic. (1:0:1-5)

Review of basic operations, fractions, percentages, consumer arithmetic. A laboratory course.

100B. Beginning Algebra. (2:2½:Arr.) Home Study also. Prerequisite: Math. 100A.

Primarily for students with no background in algebra. Equivalent to first-year high school algebra.

100C. Geometry. (1:1½:Arr.) Prerequisite: Math. 100B or equivalent.

Primarily for students with no formal background in geometry. Equivalent to high school plane geometry.

100D. Review of Basic Mathematics. (2:2½:Arr.) Home Study also.

Primarily for students who have studied beginning algebra and geometry but need extensive review: arithmetic, beginning algebra, and geometry, emphasizing applications.

100E. Intermediate Algebra. (2:2½:Arr.) Home Study also. Prerequisites: Math. 100C, and 100D or equivalent, or successful completion of Category 1 basic mathematics evaluation.

Sets, real number system, functions, graphs, algebraic manipulations, linear and quadratic equations, systems of equations, story problems. Equivalent to second-year high school algebra.

100F. Review of Fundamentals. (1:Arr.:Arr.) Home Study also.

Review of intermediate algebra; not recommended for those who have not had second-year algebra.

105. College Algebra. (3:4:0) (G-ML) Home Study also. Prerequisite: Math. 100E or two years of high school algebra and one year of plane geometry.

110. College Mathematics 1. (½-6½:5:5) (G-ML)

Topics in college algebra organized into modules, each carrying from ½ to 1 credit hour. Initial registration is in Math. 110 for the appropriate number of credit hours; final enrollment for specific modules is accomplished by departmental add/drop procedures during the term, after proper orientation. Consult your college advisement center for the specific requirements of your major. Some students may find it advisable to register for Math. 100F, Review of Fundamentals, as a part of their modular program. The modules are—

110A. Polynomial and Rational Functions. (1 credit) Home Study also. Prerequisite: Math. 100E or 100F or equivalent.

110B. Exponential and Logarithmic Functions. (½ credit) Home Study also. Prerequisite: Math. 110A or equivalent.

110C. Matrices and Linear Equations. (½ credit) Home Study also. Prerequisite: Math. 110A or equivalent.

110D. Combinatorics. (½ credit) Home Study also. Prerequisite: Math. 110A or equivalent.

110E. Linear Programming. (½ credit) Home Study also. Prerequisite: Math. 110C or equivalent.

111. College Mathematics 2. (½-5:Arr..Arr.) (G-ML)

Topics in trigonometry and analytic geometry organized into modules. The modules are—

111A. Trigonometry. (2 credits) Home Study also. Prerequisite: Math. 110A or equivalent.

111B. Analytic Geometry. (½ credit) Home Study also. Prerequisite: Math. 111A or equivalent.

112, 113, Analytic Geometry and Calculus 1, 2. (4:4:0

ea.) (G-ML) Home Study also. Prerequisites: Math. 110A,B,C,D and 111A or equivalent; for 113, Math. 112.
Plane analytic geometry; one dimensional differential and integral calculus, with applications.

119. Introduction to Calculus. (4:4::1) (G-ML) Prerequisite: Math. 110.
Introduction to plane analytic geometry and one-dimensional calculus. For students in the colleges of Biological and Agricultural Sciences and Business.

121, 122. Technical Mathematics. (3:2:3 ea.) (G-ML) Prerequisite: Math 100E; for 122, Math. 121.
College algebra, trigonometry, analytic geometry, and an introduction to calculus. Problems and applications. For students in industrial and technical education.

141, 142. Introduction to Calculus and Analysis. (4:4:0 ea.) (G-ML) Prerequisite: Math. 110A,B,C,D and 111A or equivalent; for 142, Math. 141 or equivalent.
Plane analytic geometry and one-dimensional calculus, with applications. For mathematics majors.

170. Introduction to Finite Mathematics. (3:3:0) (G-ML) Prerequisite: Math. 110 or equivalent.

190. Professional Seminar. (1:1:0)
Mathematics as a profession. Required of mathematics majors during first year; open to other interested students.

210. Introduction to Mathematical Logic. (3:3:0) (G-ML) Prerequisite: Math. 110.
Traditional logic, Boolean algebra, algorithms, Turing machines.

214. Analytic Geometry and Calculus 3. (3:3:0) (G-ML) Home Study also. Prerequisite: Math. 113.
Multidimensional calculus.

223. Technical Mathematics. (3:3:0) (G-ML) Prerequisite: Math. 122.
Analytic geometry and calculus. For Technical Institute students.

224. Numerical Methods in Technology. (3:3:0) (G-ML) Prerequisites: Math. 223 and ComSci. 231.
Interpolation, approximation, numerical differentiation and integration, linear programming, solutions of equations. For students in industrial and technical education.

291R, 292R. Honors Seminar in Mathematics. (1:1:0 ea.) (G-ML)
Seminar in structure of mathematics for freshman and sophomore mathematics majors. Open to other interested students.

300. History of Mathematics. (3:3:0) (G-ML) Home Study also. Prerequisite: Math. 112, or 141, and 301.
Development of mathematics, emphasizing the underlying principles and motivations.

301. Foundations of Algebra. (3:3:0) (G-ML) Home Study also. Prerequisite: Math. 110 or 305.
Sets, logic, and basic number systems. Required of prospective secondary teachers.

302. Foundations of Geometry. (3:3:0) (G-ML) Prerequisite: Math. 112, or 141 and 301.
The logical structure of Euclidean and non-Euclidean geometries. Required of prospective secondary teachers.

303. Mathematics and the Modern World—An Overview. (3:3:0)
History, nature, and spirit of mathematics

305. Basic Concepts of Methematics. (3:3:0) (G-ML) Home Study also.
Required of prospective elementary teachers.

306. Concepts of Mathematics. (3:3:0) (G-ML) Home Study also. Prerequisite: Math. 305.
Modular arithmetic, real numbers, complex numbers, relations and functions, and informal geometry For prospective elementary teachers.

307. Mathematics and the Humanities. (3.0:0) (G-ML) Home Study also.
Elementary ideas in contemporary mathematics for non-physical science majors. Credit may not be earned in both Math. 305 and 307.

311. Introduction to Numerical Methods. (3:3:0) (G-ML) Prerequisite: Math. 119 or equivalent.
Interpolation, curve fitting, numerical differentiation and integration, and numerical solutions to linear, nonlinear, and differential systems.

313, 314. Modern Computation. (3:0:0) Prerequisite: three semesters of calculus or consent of instructor.
Modern computational theory and practice, involving Boolean algebra, finite fields, logical design, number theory, computational algorithms, Fourier theory, and information theory. Microcomputer laboratory.

315. Methods of Advanced Calculus. (3:3:0) (G-ML) Prerequisite. Math. 214.
Topics from partial differentiation, multiple integration, infinite series, uniform convergence. For engineers and science majors.

321. Applied Ordinary Differential Equations. (3:3:0) (G-ML) Prerequisite: Math. 214.
Ordinary differential equations with applications, Fourier series; Laplace transforms. For engineers and science majors.

322. Topics in Applied Mathematics. (3:3:0) (G-ML) Prerequisite: Math. 214.
Linear algebra, vector calculus, and Fourier analysis. For engineers and science majors.

323. Applied Partial Differential Equations. (3:3:0) (G-ML) Prerequisite: Math. 321
Boundary value problems; transform methods; Fourier series; Bessel functions; Legendre polynomials. For engineers and science majors

332. Introduction to Complex Analysis. (3:3:0) (G-ML) Prerequisite: Math. 344 (or 214).
Complex algebra, analytic functions, integration in the complex plane, infinite series, theory of residues, conformal mapping.

343. Elementary Linear Algebra. (3:3:0) (G-ML) Prerequisite: Math. 119 or 112 or 141.
Linear systems, matrices, vectors and vector spaces, linear transformations, determinants, quadratic forms, Eigen values and Eigen vectors.

344. Calculus of Several Variables. (3:3:0) (G-ML) Prerequisites: Math. 113 or 142; 343.
Partial differentiation, the Jacobian matrix, and integral theorems of vector calculus.

350. Combinatorics and Graph Theory. (3.3:0) (G-ML) Prerequisite: Math. 343.
Permutations, combinations, recurrence relations, maps, graphs and digraphs, coloring problems, applications.

371, 372. Abstract Algebra. (3:3:0 ea.) (G-ML) Prerequisite: Math 343; for 372, Math. 371.
Preliminary examination of algebraic systems: groups, rings, fields, vector spaces, linear transformations, matrices, etc.

387. Theory of Numbers. (3:3:0) (G-ML) Prerequisite Math. 110 or 301.
Foundations of number theory; congruences; residues; reciprocity law; Diophantine equations.

391R, 392R. Honors Seminar in Mathematics. (1:1:0 ea.)
Topics from classical problems of antiquity, combinatorial mathematics, graph theory, real functions and numerical theory, and functional equations.

411. Numerical Methods. (3:3:0) (G-ML) Prerequisite Math. 311 or equivalent.
Continued fractions, rational and economized approximations; ordinary differential equations, initial, boundary, and systems; Eigen values, nonlinear systems of

equations; Fourier and other orthogonal methods; multiple integrals; minimum methods.

434. Introduction to Ordinary Differential Equations. (3:3:0) (G-ML) Home Study also. Prerequisite: Math. 344 (or 214 and 343).
Methods and theory of ordinary differential equations.

436. Introduction to Partial Differential Equations. (3:3:0) (G-ML) Prerequisite: Math. 321 or 434.
Solving the wave, heat, and Laplace equations; Eigenvalue problems and Fourier series.

451. Modern Geometry 1. (3:3:0) (G-ML) Home Study also. Prerequisite: Math 343 or equivalent.
Synthetic and analytic projective geometry; affine and Euclidean geometry. Geometry by invariants of groups of transformations.

452. Modern Geometry 2. (3:3:0) (G-ML) Prerequisite: Math. 451.
Relationships of geometry to algebra, supplemental design, and combinatorial mathematics.

480. Mathematical Models. (3:3:0) (G-ML) Prerequisites: Math. 344, 434 (or 321); concurrent registration in Math. 311 and 371.
Construction, solution, and interpretation of discrete and continuous models applied to problems in the physical, natural, and social sciences.

495R. Readings in Mathematics. (1-2:0:1-3 ea.) (G-ML) Prerequisite: consent of instructor.
Directed readings beyond the scope of usual undergraduate courses. Offered on demand.

501. Real Numbers. (3:3:0) Prerequisite: Math. 371; concurrent registration in Math. 451.
Extensive examination of various axiomatic descriptions of the real numbers and the interrelationships among these descriptions. Offered on demand.

502. Set Theory. (3:3:0) Prerequisite: Math. 371.
Zermelo-Fraenkel axioms for set theory, the axiom of choice, ordinal and cardinal numbers, and algebra of sets. Offered on demand.

508. Mathematical Logic. (3:3:0) Prerequisite: Math. 371 or 541.
Propositional and first-order predicate calculi, set theories, well-ordering, and transfinite induction.

512. Introduction to Numerical Analysis. (3:3:0) Prerequisite: Math. 411.
Theory of constructive methods in mathematical analysis.

513R. Advanced Topics in Applied Mathematics. (3:3:0 ea.) Prerequisite: consent of instructor.
Offered on demand.

541, 542. Introduction to Real Analysis. (3:3:0 ea.) Prerequisite: Math. 344 (or 315); for 542, Math. 541.
Rigorous treatment of continuity, differentiability, integration of functions of real variables, and infinite series.

551, 552. Introduction to Topology. (3:3:0 ea.) Prerequisite: completion of or concurrent registration in Math. 541; for 552, Math. 541.
Axiomatic treatment of linearly ordered spaces, metric spaces, arcs, and Jordan curves; types of connectedness.

585. Matrix Analysis. (3:3:0) Prerequisite: Math. 322 and 372 (or 343).
Characteristic values, canonical forms, and functions of matrices, with applications.

629. Teaching Mathematics in Secondary Schools. (3:2:0)
Offered on demand.

631, 632, Complex Analysis. (3:3:0 ea.) Prerequisites: Math. 332, 542; for 632, Math. 631.
Offered on demand.

634, 635. Theory of Ordinary Differential Equations. (3:3:0 ea.) Prerequisites: Math. 434, 512; for 635, Math. 634.
Offered on demand.

641, 642. Functions of a Real Variable. (3:3:0 ea.) Prerequisite: Math. 542; for 642, Math. 641.
Offered on demand.

643R. Special Topics in Analysis. (3:3:0 ea.) Prerequisite: Math 542.
Continued fractions, stochastic processes, generalized functions, etc.

645. Tensor Analysis. (3:3:0) Prerequisite: Math. 344 or 542.
Offered on demand.

647, 648. Theory of Partial Differential Equations. (3:3:0 ea.) Prerequisites: Math. 436, 542; for 648, Math. 647.
Offered on demand.

651, 652. General Topology 1, 2. (3:3:0 ea.) Prerequisite: consent of instructor.

653R. Special Topics in Geometry. (3:3:0 ea.) Prerequisites: Math. 372, 452.
Topics from n-dimensional projective and algebraic geometry, foundations, transformations, curves and surfaces, forms and sheaf theory.

655R. Advanced Special Topics in Topology. (3:3:0 ea.) Prerequisite: consent of instructor.
Offered on demand.

661, 662. Functional Analysis. (3:3:0 ea.) Prerequisites: Math. 632 and 642; for 662, Math. 661.
Offered on demand.

671, 672. Modern Algebra. (3:3:0 ea.) Prerequisites: Math. 371, 372; for 672, Math. 671.

675R. Special Topics in Algebra. (3:3:0 ea.) Prerequisite: Math. 671.
Group theory, commutative algebra, homological algebra, ring theory, and algebraic number theory.

681. Linear Algebra. (3:3:0) Prerequisites: Math. 371, 372.
Offered on demand.

695R. Readings in Mathematics. (1-2:1-2:0 ea.)
Offered on demand.

699R. Master's Thesis. (6-9:Arr.:Arr. ea.)

Mechanical Engineering

Professors: Andersen (Chairman, 242C CB), Cannon, Free, Heaton, Polve, Ulrich, Warner, Wille.
Associate Professors: Chase, Paxson.
Assistant Professor: Woolley.

The Mechanical Engineering Department offers a professional engineering program. The curriculum is fully accredited by the Engineers' Council for Professional Development (ECPD).

Mechanical engineers at BYU are trained to analyze and solve problems creatively. This training is beneficial not only in traditional engineering functions but also in many other areas requiring creative thinking. BYU engineering graduates are significantly represented in top levels of management in industry and government. Others have found engineering to be an excellent background for law, medicine, dentistry, business management, and other professions.

The training program at BYU which leads to a degree in mechanical engineering is built upon a sound basis of mathematics, physics, and chemistry. The engineering classroom and laboratory course work is taught by a faculty with extensive academic and industrial experience. The technical program is supplemented by a well-balanced program of social sciences, religion, biological sciences, and humanities. The professional nature of this training program enables the graduate to be immediately productive upon graduation as well as to keep up with new technological developments.

Mechanical engineering is the branch of applied science that deals with the analysis, design, development, fabrication, and application of products that are predominately mechanical. By its very nature, mechanical engineering includes many varieties of specialization. All students are provided with a central core of engineering fundamentals. By proper selection of elective courses, students can increase their depth in such specialized areas as (1) aerospace, (2) automatic controls and systems analysis, (3) bioengineering, (4) fluid mechanics, (5) heat transfer, (6) manufacturing and industrial engineering, (7) materials and metallurgy, (8) mechanical design, (9) nuclear engineering, (10) solid mechanics, (11) thermodynamics, and (12) vibrations and dynamics. Students are assigned an adviser, who works with them in developing their individual programs

Students who are inclined toward more routine technical work should consult the offerings of the Technology Department.

Recommended High School Preparation

Special recommendations for incoming engineering students are contained in the College of Engineering Sciences and Technology section of this catalog A qualified student who has sufficient high school preparation can obtain the Bachelor of Science degree in three years under the trimester calendar. Attending only two semesters per year requires the usual four years.

The prerequisites to the engineering program are DesTech. 111 (Introduction to Engineering Graphics) and Math. 110 (College Mathematics) or their high school equivalents. Students will be given placement tests prior to registration to be excused from taking these classes.

Degrees Offered

The Mechanical Engineering Department offers the Bachelor of Science (B.S.) degree, the Master of Engineering (M.E.) degree, and the Master of Science (M.S.) degree. A Doctor of Philosophy (Ph.D.) is offered in cooperation with all engineering departments.

The M.E. degree is the generally recommended path leading to a professional career in engineering practice. The B.S. program is designed as preparation for careers in such fields as law, medicine, sales work, or other employment requiring less engineering training. The M.S. and Ph.D. are research programs for students who plan careers in research and development.

To increase flexibility in scheduling, a special program (integrated master's program) is available in which students may work on the B.S. and M.E. degrees simultaneously during the last three years (six semesters). The B.S. degree may be obtained simultaneously with, or prior to, the receipt of the M.E. degree To enter the integrated master's program students must file an application and course outline for both B.S. and M.E. programs at the beginning of their junior year. After acceptance, students may take courses for graduate credit. Prior to taking the last 30 hours of course work, students must apply to Graduate School.

Undergraduate Program

Grade Requirements

To receive a bachelor's degree in mechanical engineering, a student must complete courses satisfying University general education requirements and departmental requirements with a cumulative grade-point average of at least 2.0 (C). A maximum of 9 hours of D credit may be applied toward fulfilling departmental requirements.

General Education Requirements

Students should understand that general education requirements (including religion) are in addition to the course requirements shown in the typical program. Students are urged to obtain a complete integrated course program from their department office.

Degree requirements

Requirements are listed below for both the integrated master's program and the Bachelor of Science program.

Suggested sequences for the four-year B.S. program and for the five-year integrated master's program are outlined by year. Failure to take courses in their proper sequence may delay graduation. **Flow charts showing required course sequences are available from the Mechanical Engineering Department office.** Students should also see their advisers for additional guidance in course planning

Suggested course sequences for those also attending Spring and Summer Terms are available in the Mechanical Engineering Department office.

Integrated Master's (B.S. and M.E. Degrees) Program

First Year	**F**	**W**
MechEng. 101, 151	2	2
MechEng 291R, 291R	0	0
Math. 112, 113	4	4
Physics 121, 122	3	3
DesTech. 212		2

Second Year	**F**	**W**
MechEng 201, 351	2	3
MechEng. 291R, 291R	0	0
CivEng. 201, 304	2	3
Math. 214, 321	3	3
Physics 214	1	
Physics 221	3	

Third Year	**F**	**W**
MechEng 321, 322	3	4
MechEng. 364	4	
MechEng. 431, 454	3	3
MechEng. 291R, 291R	0	0
CivEng. 303	3	
ElecEng. 301		2
Chem. 105, 106	4	4

Fourth Year	**F**	**W**
MechEng. 471, 572	3	3
MechEng. 412, 510	3½	3½
MechEng 534, 540	3½	3½
MechEng 291R, 291R	0	0
ElecEng. 304, 302	2	2
ElecEng. 305, 303	1	1
Math. 322, 323	3	3

Fifth Year	**F**	**W**
MechEng. 291R, 591R	0	½
MechEng 698		3
Technical electives	9	9

B.S. Degree Program

First Year	**F**	**W**
MechEng. 101, 151	2	2
MechEng. 291R, 291R	0	0
Math. 112, 113	4	4
Physics 121, 122	3	3
DesTech. 212		2

Second Year	**F**	**W**
MechEng. 201, 351	2	3
MechEng. 291R, 291R	0	0
CivEng 201, 304	2	3
Math. 214, 321	3	3
Physics 214	1	
Physics 221	3	
Stat. 332		2

Third Year	**F**	**W**
MechEng 321, 322	3	4
MechEng 363	2	
MechEng 431, 454	3	3
MechEng 291R, 291R	0	0
CivEng 303	3	
ElecEng 301		2
Chem. 105, 106	4	4

Fourth Year	F	W
MechEng. 412, 540	3½	3½
MechEng. 471, 572	3	3
MechEng. 291R, 291R	0	0
ElecEng. 302 or 304	2	
ElecEng. 303 or 305	1	
Technical electives	3	3

Technical Electives

Students may choose two technical electives in the B.S. program and six technical electives in the M.E. program. Under the guidance of their adviser students may choose technical electives to meet their particular educational goals. The technical electives may be chosen from the mechanical engineering courses or selected courses taught by other departments with the approval of the students' adviser. Students may select courses from several areas in mechanical engineering to obtain a broad background, or they may choose to align themselves with one of the specialized areas of mechanical engineering listed below.

Specialization Areas

Aerospace

Students who wish to specialize in the aerospace option should take MechEng. 515 for the bachelor's degree, MechEng. 511, 515, and 584 for the master's degree, and additional electives chosen from MechEng. 512, 531, 533, 535, 541, 542, and Physics 536 and 537.

Automatic Controls and Systems Analysis

Students wishing to specialize in this area for the B.S. degree should take MechEng. 531 and 534. Master's candidates should also take MechEng. 637. Both may select electives from the following: MechEng. 535; ElecEng. 513; Math. 387, 411, 512, 585.

Bioengineering

It is suggested that the biological science requirements for bioengineering be filled with courses such as Zool. 202, 203, 260, 261; and Bot.-Micro.-Zool. 201. Technical electives may be selected from Zool. 460, 662; P.E. 341, 344, 645; Chem. 281, 284, 351, 352, 481, 484.

Premedicine

A premedicine option may be completed with approximately 18 hours of work beyond the B.S. degree by making a careful selection of courses in consultation with the student's adviser (see also the Preprofessional Programs section of this catalog).

Fluid Mechanics

A student planning to specialize in fluid mechanics should take MechEng. 510 and additional courses from the following: MechEng. 511, 512, 521, 541, 542, 581, 584, 611, 641R; ChemEng. 672, 673, 674.

Heat Transfer

The specialized courses a student may take for this option are MechEng. 510, 511, 512, 521, 541, 542, 581, 584, 611, 612, 641R; ChemEng. 672, 673, 674.

Materials and Metallurgy

A student may specialize in materials by taking MechEng. 552 (or CivEng. 501, 502), 554, and selected courses chosen from CivEng. 507; ChemEng. 378; and Physics 581.

Mechanical Design

A student wishing to specialize in mechanical design should take MechEng. 554 and select additional electives from MechEng. 533, 534, 537 and 552.

Nuclear Engineering

Undergraduate students may specialize in nuclear engineering by taking ChemEng. 582; MechEng. 540; and a technical elective chosen from ChemEng. 583; Physics 555, 557; MechEng. 510, 531, 534, 541, 542; and Math. 323. Students working toward a master's degree may obtain a minor in nuclear engineering by taking ChemEng. 582, 583; and Physics 555, 557. Additional electives from the above list and certain 600-level courses may be included to strengthen the program.

Solid Mechanics

Students planning to specialize in this area may select courses in the following subareas: static design of structures—MechEng. 533, CivEng. 527; dynamics of structures—MechEng. 535, 637, CivEng. 615; mechanics of materials—MechEng. 552, CivEng. 501, 502; experimental and theoretical stress analysis—MechEng. 552, 661, CivEng. 503, 507.

Thermodynamics

A student may specialize in thermodynamics by taking MechEng. 521 and additional courses from the following: MechEng. 510, 511, 512, 541, 542, 581, 584, 611, 612, 641R; ChemEng. 672, 673, 674.

Vibrations and Dynamics

To specialize in the study of dynamic phenomena, a student should take MechEng. 535 and 637, with additional electives selected from MechEng. 534, 537, 637; CivEng. 615; Math. 332, 411, 512, 585; Physics 561, 562, 621.

Graduate Programs

Programs. Master of Science (M.S.), Master of Engineering (M.E.), and Doctor of Philosophy (Ph.D.).

The Graduate School requirement of a minimum 3.0 grade-point average applies to all graduate degree programs. A minimum GPA of 2.5 is required in the last 60 hours of course work for admission to the integrated master's program.

Entrance Examination Required. No special exams required for graduates of ECPD (Engineers' Council for Professional Development) accredited schools. Favorable consideration is given to graduates of curriculums not accredited by ECPD who submit Graduate Record Examination scores in aptitude and advanced engineering tests. Also, for non-ECPD curriculum graduates, a screening exam is required after arrival to determine weaknesses that must be strengthened.

Application Consideration Dates and Entry Times. Same as Graduate School schedule.

Master of Engineering

Prerequisites. Bachelor's degree in mechanical engineering, or, with the consent of the faculty, an allied discipline.

Fields. Applied mechanics, machine design, manufacturing engineering, nuclear engineering, thermosciences.

Minors Permissible. Option 1 and Option 2.

Requirements. Minimum of 30½ semester hours including a project (3-hr. min.—698).

Required Courses. MechEng. 510, 534, 591R, Math. 322, 323, and ElecEng. 302, 303, or 304, 305. This program is designed to provide the breadth of experience encountered by a practicing professional engineer. To increase flexibility in scheduling, a special program (integrated master's program) is available in which a student may work on the B.S. and M.E. degrees simultaneously during the last three years (six semesters).

The details of the integrated master's program are described in the undergraduate section.

Master of Science

Prerequisites. Bachelor's degree in mechanical engineering, or, with the consent of the faculty, an allied discipline.

Fields. Applied mechanics, machine design, manufacturing engineering, nuclear engineering, thermosciences.

Minors Permissible. Option 1 and Option 2.

Requirements. Minimum of 30½ semester hours, including thesis (6-hr. min.—699R).

Required Courses. MechEng. 591R and 6 hours of mathematics beyond the level of ordinary differential equations.

This is a research-type program designed for students who plan a research or development career in engineering.

Doctor of Philosophy

This program is administered by an interdepartmental committee. For further details see the College of Engineering Sciences and Technology section of this catalog.

Courses

101. Introduction to Mechanical Engineering Systems. (2:1:3)
Elementary design problems and basic computation techniques.

151. Introductory Metallurgy. (2:1:3)
Nature of metals; metallurgical examination and testing; phase diagrams; metal production and heat treatment; foundry processes; forming and welding processes; powder metallurgy; and associated laboratories.

201. Introduction to System Design. (2:1:3)
Student design experience including innovation, analysis, working drawings, construction, testing, and competitive demonstration of performance; digital computer as a design tool; programming techniques using FORTRAN.

291R. Undergraduate Seminar. (½:½:0 ea.)
Discussion of current topics.

299R. Cooperative Education: Mechanical Engineering. (½-3:0:0 ea.) Prerequisites: consent of department and college coordinators. Students must meet departmental requirements and consult adviser prior to enrollment.
On-the-job experience. Report required.

301, 302. Elements of Thermoscience 1, 2. (3:3:0 ea.) Prerequisites: MechEng. 301—Physics 122; MechEng. 302—MechEng. 301, CivEng. 304, and Math. 321.
First and second laws of thermodynamics; fluid statics; incompressible and compressible fluid flow; heat transfer by conduction, convection, and radiation, applied to electrical equipment.

321. Thermodynamics. (3:3:0) Prerequisites: Physics 122 and concurrent registration in MechEng. 363.
Fundamentals of classical thermodynamics for mechanical engineering majors, emphasizing the macroscopic approach. Covers cycles as well as an introduction to combustion.

322. Thermodynamics. (4:3:3) Prerequisite: MechEng 321.
Continuation of MechEng. 321.

351. Principles of Applied Metallurgy. (3:2:3)
Control of physical properties by strain, solution and precipitation hardening, recrystallization, and multiphase alloying, emphasizing quantitative properties predictions based upon microstructures.

363. Mechanical Engineering Instrumentation. (2:1:3) Prerequisites: Stat. 332; Physics 221; and concurrent registration in MechEng. 321.
Theory and application of static and dynamic measurements, including displacement, acceleration, temperature, pressure, strain, high-speed photography, etc.

399R. Cooperative Education: Mechanical Engineering. (3:0:0 ea.) Prerequisites: consent of department and college coordinators. Students must meet departmental requirements and consult adviser prior to enrollment.
On-the-job experience. Report required.

412. Fluid Mechanics 1. (3½:3:2) Prerequisite: Math. 321.
Fluid statics, viscous flow; dimensional analysis; incompressible flow, compressible flow; fluid meters; lift and drag; dynamic similarity; momentum; potential theory; fluid machinery.

431. Kinematics. (3:2:3) Prerequisite: CivEng. 304.
Relative motion of links in mechanisms; velocities and accelerations of machine parts; rolling contact; cams; synthesis of mechanisms. Includes computer-aided design techniques.

454. Analysis and Manufacture of Machine Components. (3:2:3) Prerequisites: CivEng. 201 and 303.
Theory, design, and manufacture.

471. Mechanical Design 1. (3:2:3) Prerequisites: MechEng. 363, 412, 454.
Application of mechanical engineering theory to specific design problems and group projects. Philosophy of design.

☐ **Civil Engineering Science 501. Advanced Mechanics of Materials.*** (3:3:0)

☐ **Civil Engineering Science 502. Advanced Properties of Materials.*** (3:3:0)

510. Fluid Mechanics 2. (3½:3:2) Prerequisites: Math. 321; MechEng. 412.
Compressible flow; shock effects; Fanno and Rayleigh lines; generalized one-dimensional flow.

511. Intermediate Gas Dynamics. (3:3:0) Prerequisite: MechEng. 510.
Potential theory and Euler's equations. Supersonic and subsonic multidimensional flow. Method of characteristics; small perturbation theory; Hodograph theory. Theoretical airfoil coefficients, etc.

512. Boundary Layer Theory. (3:3.0) Prerequisite: MechEng. 412.
The stress tensor; Navier-Stokes equations; exact solutions for parallel flow; lubrication theory; Prandtl's equations; separation; Karman-Pohlhausen integral methods; applications.

515. Applied Aerodynamics and Flight Mechanics. (3:3:0) Prerequisite: MechEng. 322.
Modern applied aerodynamics: performance, stability, and control of aerospace vehicles.

521. Energy Resources and Conversion.* (3:3:0) Prerequisite: MechEng 322.
Energy resources and energy conversion systems using the principles of thermodynamics.

531. Principles of Automatic Control.* (3:3:0) Prerequisites: MechEng. 412, 534, Math. 321.
Transfer functions applied to mechanical, hydraulic, pneumatic, and electrical components and their combination. Block diagrams; Nyquist and Routh criteria. Bode's and root locus plots; integral and error rate compensation. Nonlinear systems.

533. Stress Analysis and Design of Mechanical Structures.* (3.3.0) Prerequisite: CivEng. 303
Methods of predicting stress and deflection; optimization of components; applications to vehicle and aerospace structure design; curved beams and rings; semi-monocoque structures.

534. Dynamic System Analysis and Modeling.(3½:3:2) Prerequisite: Math 321, CivEng. 304.
Lumped models of mechanical, electrical-mechanical, fluid, and thermal systems; graphic models; physical system response; digital and analog simulation.

535. Advanced Vibration Analysis.* (3:3:0) Prerequisites: Math. 321, CivEng. 304.
Vibrations of systems with multiple degrees of freedom, vibrations of elastic bodies; random vibration; simple nonlinear systems

537. Advanced Kinematics.* (3:3:0) Prerequisite: MechEng. 431.
Geometry of constrained motion applied to linkage design; computer-aided design of mechanisms.

540. Heat Transfer. (3½:3:2) Prerequisites: MechEng. 341, 412; Math. 321.
Fundamentals of heat transfer; basic laws; conduction; convection; change of phase; radiation.

541. Advanced Heat Transfer. (3:3:0) Prerequisite: MechEng. 540.
Heat transfer analysis by numerical and analog methods, emphasizing radiation and conduction. Use of digital and analog computers, passive analogs.

542. Design of Heat-Transfer Systems.* (3:3:0) Prerequisite: MechEng. 540.
Design of heat-transfer devices and heat-exchange systems associated with environmental temperature control, electronic cooling, and aerospace vehicles.

552. Design and Materials Applications. (3:3:0) Prerequisites: MechEng. 351, 454.
Applied and residual stresses; materials selection; static, impact, and fatigue strength; fatigue damage; surface treatments; elastic deflection and stability—all as applied to mechanical design.

554. Advanced Manufacturing Processes. (3:3:0) Prerequisite: MechEng. 351 or consent of instructor.
Basic analysis of forming, machining, welding, and casting processes, emphasizing microstructures. Selection of process parameters, considering economics and material properties.

557. Corrosion. (3:3:0) Prerequisite: Chem. 105 and senior or first-year graduate standing.
Basic principles, eight common forms of corrosion, testing, materials, applications, modern theory, and high temperature metal-gas reactions.

572. Interdisciplinary Systems Design. (3:1:6) Prerequisite: MechEng. 471.
Design projects, emphasizing group project attack on contemporary problems. Interdisciplinary faculty and student participants.

575. Optimization Techniques in Engineering. (3:3:0) Prerequisites: FORTRAN or similar computer language background, Math. 321 or equivalent.
Application of nonlinear computer optimization techniques to constrained engineering design. Theory and use of "state of the art" computer routines.

581. Internal Combustion Engines.* (3:2:3) Prerequisite: MechEng 322.
Spark ignition and compression ignition engines; actual cycles; performance characteristics; carburetion and ignition principles; detonation and combustion. Laboratory work with three advanced engine testing cells.

584. Design of Fluid Machinery and Propulsion Engines. (3:3:0) Prerequisite: MechEng. 412.
Design and synthesis of radial and axial flow machines, pumps, and rocket, ramjet, and turbojet engines; application of fluid flow and thermodynamic fundamentals.

591R. Seminar. (½:1:0 ea.) Prerequisite: senior standing.
Student and faculty presentations of current topics.

595R. Special Topics in Mechanical Engineering. (Arr.) Prerequisite: consent of department chairman.

599R. Cooperative Education: Mechanical Engineering. (3:0:0 ea.) Prerequisites: consent of department and college coordinators. Students must meet departmental requirements and consult adviser prior to enrollment.
On-the-job experience. Report required.

611. Theories of Fluid Turbulence.* (3:3:0) Prerequisites: MechEng. 412; Math. 322, 323.
Theoretical and experimental study, including statistical and phenomenological models. Reynolds convention applied to classical flow equations.

612. Principles of Ideal-Fluid Dynamics.* (3:3:0) Prerequisites: MechEng. 412; Math. 322, 323.
Ideal-fluid hydrodynamics and aerodynamics, including ideal-fluid assumptions, rotational and irrotational flow, acyclic and cyclic motion, circulation, and lift.

631. Advanced Automtic Control Applications. (3:3:0) Prerequisite: MechEng. 531.
Mechanical control system analysis by computer methods; nonlinear methods; applications of modern control theory and computer controllers.

637. Dynamics in Mechanical System Design.* (3:3:0) Prerequisite: MechEng. 531 or 534.
Applied design analysis of complex systems needing evaluation of vibrations, transient response, and/or feedback control. Classical, modern, and computer techniques.

641R. Special Topics in Heat-Transfer Theory.* (3:3:0 ea.) Prerequisite: MechEng. 540.
Analysis of heat transfer in conduction, convection, or radiation.

651. Advanced Topics in Manufacturing.* (3:3:0) Prerequisite: MechEng. 554 or consent of instructor.
Presentation and evaluation of advanced aspects of material behavior, forming, welding, casting, and machining.

661. Selected Topics in Solid Mechanics.* (3:Arr.:Arr.) Prerequisites: CivEng. 303, Math. 321.
Three-dimensional equations of elasticity applied to engineering problems including tensor notation, wave propagation, computer solutions, and rate-dependent and inelastic materials.

695R. Special Problems for Master's Students. (1-3:3:0 ea.) Prerequisite: permission of department chairman.

697R. Research.* (6-9:Arr.:Arr. ea.)

698. Project for Master of Engineering. (3-5:0:Arr.) Prerequisite: graduate standing in mechanical engineering program.
Design or research project in support of the Master of Engineering program. To be completed in one semester.

699R. Master's Thesis. (6-9:Arr.:Arr. ea.)

791R. Seminar for Doctoral Students. (1:1:0 ea.)

795R. Selected Topics in Mechanical Engineering. (1-3:Arr.:Arr. ea.)

797R. Research for Doctoral Students. (6-9:Arr.:Arr. ea.)

799R. Doctoral Dissertation. (6-9::Arr.:Arr. ea.)

*Electives offered on demand.

Microbiology

Professors: Beck, Bodily, Donaldson (Chairman, 775 WIDB), Larsen, North, R. Sagers (Graduate Coordinator, 751 WIDB), Wright.
Associate Professors: Bradshaw, Burton, Jensen, Johnson.
Assistant Professor: Leavitt.
Instructors: Allman, Anderson, Peterson.
Special Instructor: G. Sagers.
Adjunct Professors: Bolick, Butler, Call, Christensen, Kepas.
Laboratory Superviser: Lee.

The Microbiology Department offers programs leading to the B.S., M.S., and Ph.D. degrees. Some fields of specialization are: food microbiology, immunology, industrial microbiology, medical microbiology, microbial ecology, microbial genetics, microbial physiology, and virology. Graduates are employed in a wide variety of positions in industry, hospitals, government agencies, and universities. For details concerning programs for graduate study, students should refer to the Graduate Programs section. Four major areas of emphasis, each leading to a Bachelor of Science degree in microbiology, are listed below. No hours of D credit in microbiology will be acceptable for graduation. Only 5 hours of D credit in required supporting classes will be acceptable for graduation.

Undergraduate Programs

Microbiology, Premedicine, and Predentistry

This emphasis is recommended for students who desire excellent preparation for graduate study in microbiology and for students who plan to attend medical, dental, or osteopathic schools. Minimum requirements: Bot.-Micro.-Zool. 201; Bot. 376; Math. 110; Chem. 105, 106, 223, 351, 352, 353; Physics 201, 202 (105, 106 for predental students); Micro. 331, 491R, 501, 511, 512, and 531. Students who gain admission to an accredited professional school after completion of their junior year may substitute credit received in pathology and microbiology at the professional school for Micro. 511, 512, 531, and 491R. The student can then, by transfer of credit, receive a B.S. degree, providing other University requirements have been met.

Medical Technology Integrated (With Internship)

Through a cooperative agreement with Provo, Idaho Falls, and Salt Lake City hospitals, provision has been made for training medical technologists. The program leads to certification as a registered medical technologist by the American Association of Clinical Pathologists. The curriculum consists of seven semesters of resident study on the Brigham Young University campus followed by six months of internship at a Provo, Idaho Falls, or Salt Lake City hospital. Minimum requirements: Bot.-Micro.-Zool. 201; Math. 110; Chem. 105, 106, 223, 351, 352, 481; Physics 105, 106; Zool. 260, 317; Micro. 102, 331, 393, 394, 407, 420, 421, 491R, 501, and 511, 513, and registration during the six-month hospital internship in Micro. 399R.

Laboratory Science

This program is for students in medical technology who elect to complete requirements for a B.S. degree prior to the hospital internship and for microbiology majors who plan to obtain employment at the Bachelor of Science level as biomedical technicians at laboratories in industry and in government agencies. Minimum requirements: Bot.-Micro.-Zool. 201; Math. 110; Chem. 105, 106, 223, 252, 481; Physics 100; Micro. 331, 451, 491R, 501, 511, 512, and 7 additional credit hours selected from Micro. 361, 381, 391, 392, 411, 521, 522, 531, or 581. Students planning a hospital internship must include Micro. 391 and 392 and Zool. 261 and 317 in their programs. Physics 201 and 202 and Chem. 351, 352, and 353 are strongly recommended as substitutes for Physics 100 and Chem. 252.

Environmental Health Science

This program is designed to prepare students for employment in a variety of environmental health-related positions in government agencies and private industry. Graduates are also well prepared to pursue graduate work in schools of public health. Minimum requirements: Bot.-Micro.-Zool. 201; Bot.-Zool. 350; Math. 110; Stat. 221; Chem. 105, 106, 252, 481; Physics 201, 202; Zool. 317, 331; Micro. 331, 361, 381, 491R, 501, 511, 512, 531. Recommended additional courses: Bot. 370, 533; FSN 461, 462; Geog. 101; Geol. 104; Zool. 371, 535; CivEng. 550, 555; Micro. 451, 601, 632.

General Education Requirements

See the general education programs section of this catalog.

Microbiology and Preprofessional—Recommended Three-Year Sequence of Courses for B.S. Degree

First Year	Su	F	W	Sp
Math. 110, 119	4	4		
Chem. 105, 106, 351		4	4	3
Bot.-Micro.-Zool. 201		4		

Second Year	Su	F	W	Sp
Chem. 352, 353	3	2		
Physics 201, 202		5	5	
Zool. 203		4		
Micro. 331, 501			5	5

Third Year	F	W	Sp
Chem. 223	5		
Micro. 511, 512, 531	4	4	
Micro. 491R		1	
Bot. 376		3	

Laboratory Science—Recommended Three-Year Sequence of Courses for B.S. Degree

First Year	Su	F	W	Sp
Math. 110, 119	4	4		
Chem. 105, 106		4	4	
Bot.-Micro.-Zool. 201			4	

Second Year	F	W	Sp	Su
Zool. 261	4			
Chem. 351	3			
Chem. 352, 353		5		
Micro. 331, 501, 511, 512		5	5	4

Third Year	F	W	Sp
Zool. 317	3		
Physics 201, 202	5	5	
Micro. 531, 391	4	3	
Micro. 491R			1
Chem. 223			5
Chem. 481, 484		6	

Medical Technology (With Integrated Internship)—Minimum Requirements

First Year	Su	F	W
Math. 110	4		
Chem. 105, 106		4	4
Micro. 102		1	
Micro. 201			4

Second Year	F	W
Chem. 351, 352	3	3
Physics 105, 106; or 201, 202	3	3
Micro. 331		5

Third Year	F	W
Micro. 501, 511, 513	5	4
Micro 407	3	
Zool. 260	3	
Chem. 223	5	
Micro. 420		5
Micro. 421		4

Fourth Year	F	W	Sp
Micro. 393	5		
Micro. 394	4		
Chem. 481	4		
Zool. 317	3		
Micro. 491R	1		
(Hospital internship)			
Micro. 399R		1-9	1-8

Graduate Programs

Programs. Master of Science (M.S.), Doctor of Philosophy (Ph.D.).

Entrance Examination Required. Graduate Record Examination.

Application Consideration Dates. Same as Graduate School deadlines.

Entry Times. Any regular registration.

Master of Science

Prerequisites. Adequate preparation for graduate work in the Department of Microbiology presupposes satisfactory training in the physical and biological sciences. If a student is deficient in foundation courses, opportunity will be given after entering Graduate School to correct these deficiencies; however, such a student will not be able to receive the advanced degrees in the minimum time required of more qualified candidates.

Fields. Genetics, medical technology, microbiology.

Minors Permissible. Any approved biological or physical science minor; Option 2.

Required Courses. Micro. 331, 501, 511, 512, 531, 551, 581, 691R (2 hours); one year of inorganic college chemistry; one semester of quantitative analysis; Chem. 351, 352, 353, 481 and 484 or 685, 686, and 687; Physics 201 and 202; and Math. 119. Many of these courses would normally be taken during a student's undergraduate training.

Medical Technology Field. A nonthesis M.S. degree program is offered to certified medical technologists by the Department of Microbiology.

Doctor of Philosophy

Prerequisites. Master's degree in a biological or physical science or recommendation by the departmental graduate admissions committee that exceptional students bypass the M.S. degree with direct acceptance into the doctoral program.

Fields. Genetics, microbiology.

Minors Permissible. Any approved minor in biological or physical science.

Requirements. The courses and number of credit hours required for the Ph.D. degree will be determined by the advisory committee based upon the student's level of previous academic preparation and specific interests.

Prior to selection of a dissertation subject and assignment to a research adviser, the student must pass a written qualifying examination in the following areas: (1) general microbiology, (2) pathogenic microbiology, (3) immunology, (4) virology, (5) microbial physiology, and (6) microbian genetics. This examination will normally be given during the first year of doctoral study. It may be waived if the student has received the master's degree in microbiology at Brigham Young University.

A student must pass a written and oral comprehensive examination prior to admission to candidacy for the Ph.D. degree. This examination will be taken not earlier than two semesters after completion of the qualifying examination. Prior to taking the comprehensive examination the student must have satisfied the language-tool requirements and completed all formal courses required for the major and minor as well as all supporting courses.

Required Courses. All classes required for a master's degree in microbiology, as listed above, plus a course in calculus, Chem. 461 and 462, and Micro. 641 and 661.

Courses

101. Introduction to Medical Technology. (1:1:0)
Lectures, films, and observation at hospital laboratories.

102. Introduction to Medical Technology Laboratory. (1:0:3) Prerequisite: previous or concurrent registration in Micro. 101.
Hospital laboratory techniques.

121. Introductory Microbiology. (3:2:2) (G-BS)
Recommended for students seeking a liberal education in microbiology who do not have the prerequisites to take the more advanced courses. Fundamental biological processes observed in micro-organisms. Only one of the two courses 121, 321 may be taken for credit.

200. Principles of Biology. (3:3:0)
Preparatory course for general education students desiring to take the Category I broad evaluation in Natural Science, Biology portion.

201. (Micro.-Bot.-Zool.) Introduction to Biology. (4:5:0) (G-BS) Prerequisites: Chem. 105; concurrent registration in Chem. 106.
Basic principles for majors and minors in biology.

311. Sanitation and Public Health. (2:2:0) Home Study also. (G-BS)
Roles of individual and the community in maintaining a healthful environment.

321. General Microbiology. (3:3:0) Home Study also. (G-BS) Prerequisites: any chemistry courses and any zoology or botany courses. Not open to students who have completed Micro. 121.
Microbial world, emphasizing disease-producing micro-organisms.

322. General Microbiology Laboratory. (1:0:2) (G-BS) Prerequisite: concurrent or previous registration in Micro. 321.

331. Microbiology. (5:3:6) (G-BS, ML) Prerequisite: any organic chemistry course.
First course for majors and minors in microbiology or medical technology and others desiring a comprehensive course in microbiology.

361. Food and Dairy Microbiology. (3:2:3) (G-BS) Prerequisite: Micro. 121 or equivalent.

☐ **Botany 370. Principles of Genetics 1.** (2:2:0)

☐ **Zoology 371. Principles of Genetics 2. (2:2:1)**

☐ **Botany 372. Evolutionary Genetics.** (2:2:0)

381. Water and Sewage Microbiology. (2:1:3) (G-BS) Prerequisite: Micro. 121 or equivalent.

391, 392. Clinical Pathology. (2:1:3 ea) Prerequisite: Micro. 331.
Theory and application of diagnostic methods employed in hospital laboratories.

393. Pathophysiology and Laboratory Diagnosis. (5:5:0)
Medical laboratory techniques in hematology, blood banking, coagulation, and serology.

394. Pathophysiology and Laboratory Diagnosis (Laboratory). (4:0:15) Prerequisites: Micro. 501 and previous or concurrent registration in Micro. 511.

399R. Co-op Ed.: Medical Technology Hospital Internship. (1–9:0:40 ea.)

407. Clinical Microbiology. (3:0:9)
Isolation and identification of pathogenic bacteria and fungi.

411. Epidemiology. (2:2:0) (G-BS) Prerequisite: Micro. 121 or equivalent.

420. Pathophysiology and Laboratory Diagnosis. (5:5:0) Prerequisites: Chem. 351, 352, 481.
Medical laboratory techniques in urinalysis, clinical chemistry, and clinical microbiology.

421. Pathophysiology and Laboratory Diagnosis (Laboratory). (4:0:15) Prerequisites: Chem. 351, 352, and 481, or concurrent registration in Micro. 420.

451. Bacterial Physiology. (3:3:0) (G-BS) Prerequisites: Micro. 331 and Chem. 281 or equivalent.

491R. Undergraduate Seminar. (1:1:0 ea.) Prerequisite: Micro. 501.

495R. Special Problems. (Arr.)

501. Pathogenic Microbiology. (5:3:6) Prerequisite: Micro. 331 or consent of instructor.

511. Immunology. (2:2:0) Prerequisite: Micro. 501 or consent of instructor.

512. Immunology Laboratory. (2:0:6) Prerequisite: previous or concurrent registration in Micro. 511.

513. Serology Laboratory. (1:0:3) Prerequisite: previous or concurrent registration in Micro. 511.

521. Industrial Microbiology. (2:2:0) Prerequisites: Micro. 331 and biochemistry.

522. Industrial Microbiology Laboratory. (1:0:3) Prerequisite: completion of or concurrent registration in Micro. 521.

531. Virology. (4:2:6) Prerequisite: Micro. 501 or 511

551. Advanced Microbiology. (5:3:6) Prerequisites: Chem. 481 and 484 or consent of instructor.

581. History of Microbiology. (1:1:0) Prerequisite: senior or graduate status.

601. Pathogenesis of Infectious Disease. (2:0:0) Prerequisites: Micro. 511 and consent of instructor.

611. Advanced Immunology. (2:2:0) Prerequisite: Micro. 511.

631. Advanced Virology. (2:2:0) Prerequisites: Micro. 531; Chem. 481 or equivalent.

632. Cell and Tissue Culture Techniques. (2:0:6) Prerequisites: Micro. 531; Chem. 481 or equivalent.
Advanced procedures.

641. Radioactive Tracer Techniques in Biology. (3:1:6) Prerequisites: Physics 202 and consent of instructor.

651R. Special Topics in Microbiology. (1–2:Arr.:Arr. ea.)

661. Microbial Genetics. (4:3:3) Prerequisites: Micro. 331, a course in general genetics, and Chem. 481 or equivalent.
Molecular bases of genetics of bacteria and bacteriophages, including mechanisms of DNA transfer, uptake, recombination, replication, and mutation.

671. Clinical Correlation. (2:1:3)
Correlating laboratory data with the diagnosis, pathogenesis, course, and treatment of disease.

691R. Graduate Seminar. (1:1:0 ea.)

695R. Research. (Arr.)

699R. Master's Thesis. (Arr.)

799R. Doctoral Dissertation. (6-10:Arr.:Arr. ea.)

Military Science (Army ROTC)

Professor: Colonel Andrews (Chairman, 320-A ROTCB).
Associate Professor: Lieutenant Colonel Hall.
Assistant Professors: Lieutenant Colonel Boyer, Major Aldridge, Captain Larsen, Captain Jacobsen, Captain Merz.
Tactical Instructors: Sergeant Major Taylor, Sergeant First Class DeFrehn, Sergeant First Class Mosier, Staff Sergeant Thelin, Staff Sergeant Clayton, Specialist Fourth Class Petty.

Undergraduate Program

General Information. The Army ROTC Program is designed to produce highly qualified commissioned officers in the U.S. Regular Army, the U.S. Army Reserve or the U.S. Army National Guard. The instructional program complements the academic schedule of the University and is taught by professional career army officers. Students specialize in the major field of their choice and graduate with the ability to function as a junior executive. The Army ROTC studies are designed to teach principles and techniques of leadership and management in preparation for service as an army officer and as a leader in civic and community affairs. All academic work counts toward graduation requirements.

The traditional Army ROTC program extends over a four-year period fitted to the normal progression of a student through four years of college. It consists of two phases: a two-year basic course during the freshman and sophomore years, and an advanced course designed for completion during the normal junior and senior years—to include a six-week advanced camp in the summer between the two years. For specific circumstances, students may take two years of academic work at once. Such actions must be approved in advance by the professor of military science.

A two-year program is also offered which enables students to complete all requirements for U.S. Army commission in two years of college. Applicants for the two-year program may be upper-division or graduate students, provided they have a minimum of four semesters remaining at BYU at the time of entry into the program. Applicants must complete a physical examination and other associated requirements during the year prior to enrollment. Two-year students normally process for admission during the first month of the Winter Semester of their sophomore year and enter the program at the beginning of their junior year.

Students entering either the four-year or two-year program incur no military obligation whatever until such time as they sign their advanced course contract at the beginning of the junior year. At that time, they must agree to serve as a commissioned officer for a period of three years subsequent to graduation; they are sworn into the U.S. Army Reserve; and they begin to receive the $100 monthly subsistence allowance.

Veteran students who have had one or more years of active duty may qualify for direct entry into the advanced course by receiving placement credit for the basic course from the professor of military science.

All students must be citizens of the United States or have filed intent to become citizens. Foreign students may be enrolled if they obtain prior written approval of both the United States Government and their own national government.

To receive a commission as a second lieutenant in the U.S. Army, students must earn a baccalaureate degree and be commissioned prior to their 28th birthday. Waivers of age up to 32 may be approved by the Department of the Army under special circumstances.

Period of Nonattendance. Students who are in a five-year academic program, such as engineering majors, may complete their Army ROTC courses at any point prior to their graduation. They are encouraged to participate in leadership laboratory work even when they are not enrolled for military science classroom courses. Out-of-phase students and those who will be student teaching should consult the professor of military science.

Minor in Military Science. Students desiring military science as a minor must complete the Army ROTC courses which qualify them for a U.S. Army commission plus from 2 to 6 additional hours approved by the professor of military science. Application should be made not later than the beginning of the final year of Army ROTC.

Textbooks, Uniforms, and Allowances. All textbooks, uniforms, and training materials are furnished by the U.S. Army. All students in the advanced course receive a $100 monthly allowance (approximately $2,000 for the two years). Additionally, students attending either the basic or advanced camps receive approximately $500 for the camp period, plus travel to and from the camp.

Army ROTC Scholarship Program. Full tuition assistance is available to students on a competitive basis. Senior students in high school may qualify for a four-year scholarship. College students enrolled in Army ROTC may qualify for a three, two, or one-year scholarship. The scholarship provides for full tuition, fees, full textbook allowance, and $100 per month for the period of the scholarship. Students receiving these scholarships must agree to serve four years of active duty. Contact the Military Science Department for application procedures.

Extracurricular Activities. Army ROTC cadets will be able to extend their academic and laboratory associations into a variety of extracurricular ROTC activities. Among these are the Ranger Company, Drill Team, Army ROTC Chorus, Army ROTC Marching Band, annual Military Ball, and the many school service projects performed by the cadet brigade. Army band and chorus classes are listed under the Music Department, and each carries one hour of credit.

LDS Missions. Students who wish to serve a two-year LDS mission can do so most conveniently between their freshman and sophomore years. This allows them to be on campus during the spring of their sophomore year to facilitate their selection for the advanced course. However, interruptions of the program at other times for a mission can be arranged by obtaining individual approval from the professor of military science.

Leadership Laboratory Course Fee. A course fee is required of each participating student. The purpose of this fee is to cover cadet activity expenses.

General Education Requirements In Physical Education. Students in the Army ROTC Program can complete the general education PE requirements listed in the New General Education Program section of this catalog while participating in the leadership laboratory. These are accomplished through the Military Physical Fitness Test and participation in the Military Run for Your Life or Swim for Your Life programs. Your Army ROTC instructor can give you complete details.

Army Sponsor Corps. The Army Sponsor Corps is a campus service organization for women students. Members are usually selected for membership during the Fall Semester. They are required to register for a leadership laboratory course corresponding to their academic year in the University. They receive one-half credit hour per semester for the laboratory course.

Program of Instruction. The ROTC program is designed to complement the students' civilian goal of acquiring a baccalaureate degree in a course of study of their choosing while enabling them to develop the knowledge, skills, and attitudes for transition into one of the Army's fifteen branches upon commissioning. The program also enables students who plan a civilian career to fulfill their military obligation to their country while serving as an officer. Following the completion of active service, ROTC graduates reflect their leadership training as leaders in business, civic, and community affairs.

Sequence of Courses. The following is the normal sequence of Army ROTC classes. (Two-year program students follow the sequence shown for the junior and senior years. Selected courses may be offered during the Spring and Summer Terms if there is sufficient student demand. Consult the Class Schedule or the course instructor for details.)

Basic Course		
Freshman	**F**	**W**
MilSci. 110, 111	½	½
MilSci. 120, 121	1	1
Sophomore	**F**	**W**
MilSci. 210, 211	½	½
MilSci. 220, 221	2	2
Advanced Course		
Junior	**F**	**W**
MilSci. 310, 311	½	½
MilSci. 320, 321	3	3
Senior	**F**	**W**
MilSci. 410, 411	½	½
MilSci. 420, 421	3	3

Courses

110, 111. Leadership Laboratory—Freshman. (½:0:2 ea.)
Leadership, drill and ceremonies, rifle firing, tactical training at squad and platoon level, rappelling, environmental survival, mountaineering, orienteering, field communications, and other adventure training.

120. Military Science I. (1:1:2)
Principles of leadership, management and decision making, care and maintenance of military rifle, the Church and military service, and pros and cons of an Army career.

121. Military Science I. (1:1:2) Prerequisite: MilSci. 120 or equivalent military experience.
Introduction to the military map, branches of the Army, and American military forces and American society.

131. Military Science I. (2:2:2)
Alternate single-semester course including course descriptions as listed for MilSci. 120 and 121.

210, 211. Leadership Laboratory—Sophomore. (½:0:2 ea.) Prerequisite: MilSci. 111 or equivalent military experience.
As listed for MilSci. 110, emphasizing functions, duties, and leadership responsibilities of squad leaders and platoon sergeants.

220. Military Science 2. (2:2:2) Prerequisite: MilSci. 121 or equivalent military experience.
Principles of war; American military history, emphasizing leadership principles and techniques.

221. Military Science 2. (2:2:2) Prerequisite: Mil. Sci. 220 or equivalent military experience.
Military map and aerial photograph reading, including orienteering; Army organization; and introduction to military tactics.

310, 311. Leadership Laboratory—Junior. (½:0:2 ea.) Prerequisite: MilSci. 211 or equivalent military experience.
As listed for MilSci. 110 emphasizing leadership and leadership evaluation in the peer group.

320. Military Science 3. (3:3:2) Prerequisite: MilSci. 221 or equivalent military experience.
Organizational leadership and management including structure, motivation, interpersonal relations and military professionalism; student military instructional presentations; and military communications and equipment.

321. Military Science 3. (3:3:2) Prerequisite: MilSci. 320.
Functions and missions of Army branches; advanced map and aerial photograph reading; organization for combat; squad, platoon, company offensive and defensive tactics; advanced camp orientation.

410, 411. Leadership Laboratory—Senior. (½:0:2 ea.) Prerequisite: MilSci. 311.
As listed for MilSci. 110, stressing responsibilities in leadership as cadet officers in planning and directing all types of military training.

420. Military Science 4. (3:3:2) Prerequisite: MilSci. 321.
Military command and staff relationships, military writing, logistics and maintenance, unit administration, mess, training and supply management, situation estimates, and preparation of operations orders.

421. Military Science 4. (3:3:2) Prerequisite: MilSci. 420.
Leadership and management in contemporary situations, national security problems and their effect on the Army, military law, and precommissioning orientation.

Music

Professors: Bradshaw, Davis, Earl, Goodman (Chairman, C-550 HFAC), Halliday, Kalt, H. Laycock, R. Laycock, Mason, Nibley, Nordgren, Sardoni, Williams, Woodward.
Associate Professors: Belnap, Cundick, Dalton, Foxley, Gibbons, Keeler, Longhurst, Manookin, Mathiesen, Pollei, Powley, Randall, Ripplinger, Robison, Stubbs, Unsworth.
Assistant Professors: Arbizu, Bachelder, Dayley, Downs, Harris, Sargent, Smith, Terry, Wakefield, Webb.
Instructors: Anderson, Bos, Hobson, McIntosh.

Undergraduate Program

The main objectives of the Department of Music are to help students attain through music the skills and proficiencies of an artist while they are gaining a broad general education; to develop talent to the highest degree possible; to develop music teachers for their profession; and, through association with distinguished artists and teachers, to help all BYU students acquire discriminating taste and sound critical judgment.

The Bachelor of Arts degree is available with majors in music education and music performance. The Bachelor of Music degree is available with majors in music performance, music pedagogy, music education, music theory, and composition. The master's and doctoral degrees may be taken in musicology, composition, music theory, music education, and music performance.

Music majors study a certain amount of applied music in order to develop proficiency on their major instrument or in voice. Students who wish to become skilled performers in order to qualify themselves to assume positions in the concert or professional world should major in music performance; those who wish to become composers or arrangers should major in composition; those who desire to become music copyists or to teach theory of music should major in music theory; and students wishing to specialize in giving private lessons in a studio while developing excellent performance skills should major in music pedagogy.

Prospective school teachers have the opportunity to specialize in general music, vocal, or instrumental music. Each program is designed to emphasize the essential aspects of preparation for teaching in public schools. The master's degree program in elementary or secondary school music is designed to prepare teachers, supervisors, and music consultants who can help classroom instructors teach music effectively.

A cultural atmosphere seldom equaled is provided through concerts and recitals, including visiting groups and artists. The Department of Music sponsors more than 285 concerts and recitals each year, not including the visiting performing series provided by student body activities and by the lyceum committee.

There is a musical organization for every student at BYU who is interested in singing or in playing a musical instrument.

Prerequisites. The Music Department presupposes that a student who wishes to major in music will have had previous training in music before entering the University. In order to determine the degree of attainment in basic musical skills, each entering freshman and transfer student who desires to major in music will be given the Music Department entrance test, which is given each semester during the orientation period and at other times through the University Testing Service.

Recital Attendance. The Music Department annually presents numerous recitals, concerts, and performances. These offerings are augmented by the University series of recitals and concerts by world-renowned artists and major musical performing groups. Music majors are required to attend at least sixteen of these musical events per semester in residence. They are responsible for recording their attendance at performances, using forms provided by the Music Department. At the end of each semester they return the form to the College Advisement Center, D-444 HFAC, where they are placed on file.

Piano Proficiency. All music majors are required to take a preliminary examination in piano. This examination is provided during orientation and registration. Proficiency at the level of easy piano accompaniments is required. Those not meeting this proficiency standard must make up the deficiency in either private or group piano study.

Proficiency Examinations on Major Instruments or Voice. Proficiency examinations for each music major are given near the end of each semester. Students perform representative works studied during the year. The student submits as a part of the examination a repertoire list indicating which pieces are to be performed for the examination. Forms outlining minimum proficiency requirements for each instrument and each major are available at the Music Department advisement center. Performance majors have a senior recital in lieu of an examination in the fourth year, but others may elect to give a recital during any semester in lieu of the proficiency examination for that semester.

Recital Fees. A fee of $35.00 is assessed for a graduate or undergraduate student's solo or joint recital. This fee is for printing programs and recording the recital, a tape of which is given to the student.

Major Ensemble Requirement. Music majors except those in theory and composition are required to play or sing in a major musical organization each semester while in residence. Music education majors are exempted from this during the semester of student teaching. Theory and composition majors must have at least 4 hours of major ensemble credit.

D Credit. No D credit in music can be applied toward the degree.

Senior Comprehensive Examination. All graduating seniors must pass the Senior Comprehensive Examination two months prior to graduation.

Curriculum for Music Majors. Since the first-year program is identical for all majors, the area of specialization within the Music Department need not be chosen until the beginning of the sophomore year. Admission to the various specialized programs will be based upon the following points:

a. Composition majors: strong achievement in Music 103, 195, and 196, and approval of the composition faculty.
b. Music education: good balanced achievement in all course work and substantial progress in performance, as evidenced in the proficiency examination given at the close of the first year of study. Continuation is dependent upon recommendation of individual music education instructors with whom the student has studied.
c. Music theory majors: strong achievement in Music 103, 195, and 196, and generally good scholastic achievement in other courses.
d. Performance majors: strong achievement in performance, as evidenced in the proficiency examination given at the close of the first year of study.
e. Pedagogy majors: substantial progress in performance and strong achievement in Music 565R and 566R.

General Education Requirements for the B.M. Degree

Students seeking the B.M. degree must complete the University Requirements (14 hours of religion, 1 hour of PE, ½ hour of physical fitness, 65½ hours of major and electives) and the following general education requirements for a 128-hour minimum total:

Preparation	Evaluations	Hours
Category I (Basics)		
Reading and Writing	2	4
Basic Mathematics	1	2
Health Education	1	1
	4	7
Category II (Breadth)		
Arts and Letters	1 (not in music)	3
Natural Science	*2	6
Social Systems	**1	3
	4	12
Category III (Further Skills)		
Advanced Writing	1	3
	1	3

*Physical Science and Biological Science broad evaluations required of all students.

**American Heritage evaluation, for which Social Science 100 is preparatory, is required of all students.

Music Minors

Students who desire an academic minor in music will take Music 103, 195, 2 hours of ensemble, and 6 hours of electives in music. The Music Department offers no music minor leading to secondary teaching certification.

Elementary Music Education Minors. Prospective elementary school teachers who desire a minor in music are required to take Music 103, 195, 421, 3 hours of ensemble (band, orchestra, or chorus), and 4 hours (2 hours of piano and 2 hours of voice) of class or private study until a functional proficiency in piano and voice is demonstrated.

Music Minor in Organ (19 hours): Those who desire to obtain a music minor in organ are required to take Music 159R and 160R (8 hours), 167, 103, 195, 201, and 468.

Degree in Performance

To receive a Bachelor of Music degree with a major in performance, a student must complete the following courses: Music 160R (8 hours), 103, 195, 196, 202, 295, 296, 360R (8 hours), 472, 481 (except voice majors), 484, 485, 491, 565R and 566R (6 hours), and ensembles (8 hours). Keyboard majors substitute Music 262R, 263R, 407, and 463R for part of the ensemble requirement. Other majors are encouraged to vary their experience.

Majors in the various performance areas are required to take certain special classes in addition to the above requirements:

Organ majors—Music 167, 468.
Woodwind majors—Music 368 and 2 hours of chamber music.
Brass majors—Music 370 and 2 hours of chamber music.
String majors—Music 372 and 2 hours of chamber music.
Voice majors—Music 165, 166; German 101, French 101, Italian 101, or equivalents.

At least three weeks before the date of their senior recital, students must appear in a recital audition to demonstrate readiness for the presentation of the required senior recital. This recital is normally presented during the Winter Semester of the senior year and replaces the audition for that semester.

Degree in Pedagogy

To receive a Bachelor of Music degree in pedagogy, a student must complete the following courses:

Music Theory (22 hours)
  195, 196, 202, 295, 296, 491
Music Literature and History
  103, 484, 485, 566R
Performance and Pedagogy (20 hours)
  160R, 360R (16 hours); 565 (4 hours); senior recital (full or joint)

Special Area Requirements and Electives (28 hours)
  Piano: 262R (2 hours); 263R, 463R (6 hours); 265R (4 hours); 105R (2 hours organ); 160R (2 hours organ); electives (12 hours)
  Voice: 165, 166 (2 hours): German 101, French 101, Italian 101 (12 hours); vocal ensemble (at least one semester in opera); private piano (if needed, 4 hours beyond Music 108); electives (8 hours; additional piano study recommended)
  Organ: 167, 468 (4 hours); 263R, 463R (4 hours): 407, 507R (6 hours, if needed); private piano (2-4 hours); electives (12 hours: 481, 517R recommended)
  Strings: 372 (2 hours); large ensemble on major instrument (6 hours), on minor instrument(s) (1 hour); chamber ensemble (2 hours); electives (12 hours; additional private study on minor instruments of choice recommended)
    Violin majors—one semester each of viola and cello (4 hours)
    Viola majors—one semester each of violin and cello (4 hours)
    Cello majors—one semester each on string bass and violin or viola (4 hours)

Degree in Music Theory

For a Bachelor of Arts degree with a composite major in music theory, a student is required to complete the following music courses or their equivalents: Music 103, 195, 196, 202, 295, 296, 407, 471, 481, 484, 485, 491, 495, 571, 581, ensemble (4 hours in at least two different ensembles). If the specialty is piano, 12 hours of Music 160R and 360R (third-year proficiency) are required; on specialties other than piano, 8 hours of Music 160R (second-year proficiency) are required.

The hours to be taken in individual or group instruction may be reduced if students, as determined by entrance examinations, have already had considerable training in these areas. At the end of each semester of individual instruction, students take an examination on their major instrument or in voice to determine their level of achievement. For the examination, each candidate submits a repertoire list indicating compositions or studies especially prepared for the examination. Forms on which a record of the student's repertoire is kept and outlines of instrumental and vocal proficiency requirements are available at the Music Department office.

Majors in music theory participate in musical ensembles for a minimum of four semesters of undergraduate training. The student performs in at least two ensembles. A student whose specialty is a band or orchestral instrument takes two hours of instrumental ensemble and two hours of choral ensemble. A student whose specialty is voice sings in at least two choral ensembles.

Every music theory major must appear a minimum of fifteen minutes in solo or chamber music recitals.

Theory majors with keyboard specialty must meet third-year proficiency requirements. Those with other specialties must meet second-year proficiency requirements and pass a functional piano examination equivalent to Music 108 proficiency, preferably during the first semester.

Degree in Music Education (Composite Major)

To receive a Bachelor of Music Degree with a composite music education major, a student is required to complete the following music courses or their equivalents:

	Hours
Music 103, 195, 196, 295, 296	21
Music 107, 108, 202, 277	10
Music 471 or 481, 484, 485	9
Ensemble	6
Private instruction on specialty	12
Instrumental emphasis*	
367, 368, 370, 372, 375A and B	11
Choral emphasis**	
165, 166, 207, 208, 374A and B	10
(Piano specialist will take 4 hours of 159R in voice in place of the 207-208)	

A dual emphasis requires the specialized instrumental (*) and the choral (**) coures.

This degree requires additional professional education courses designed and jointly taught by educators and music educators. The courses consist of SecEd. 276, section 26 (4 hours); SecEd. 376 (5 hours); and SecEd. 476, section 26 (14 hours).

The 6 hours of ensemble for music education majors with a wind or percussion emphasis are divided in the following manner:

1 hour of chamber music.
5 hours of large ensemble. The bulk of this requirement will be fulfilled by participation in 138R and 338R, sections 1 and 2, and in 147R and 347R sections 1 and 2.
  Only 1 hour of credit from each of the following may count toward this large ensemble requirement:
    Marching-Varsity Band (135R and 335R)
    Jazz Ensemble (144R and 344R)
  138R and 338R, section 3, will not count toward fulfilling this requirement.

For those with a string emphasis the hours are divided as follows:

1 hour of chamber music.

5 hours of large ensemble. The bulk of this requirement will be fulfilled by participation in 147R and 347R, sections 1 and 2.

Only 1 hour of credit from chamber orchestra (148R and 348R) may count toward this large-ensemble requirement.

147R and 347R, section 3, will not count toward fulfilling this requirement.

Voice majors must sing in at least two types of choral ensembles, and string majors must perform for at least four semesters with the orchestra.

Every music education major must pass a functional piano proficiency examination or complete Music 107 and 108 before being permitted to student teach.

Music education majors also take a proficiency examination each semester covering the materials studied in private lessons on their major instrument or in voice. The sophomore proficiency standards must be passed before a student is allowed to continue into advanced study (Music 360R) or to register for student teaching. A minimum of one year of advanced study is required before graduation. The final proficiency examination is taken at the end of the junior year.

Every music education major must perform a minimum of thirty minutes in solo or chamber music recital, twenty minutes of which must be solo performance time.

Degree in Music Composition

The music composition major is designed for those who would like to become well prepared as composers. Although the immediate demand for composers is limited, there are a great many personal satisfactions to be derived in this field.

The requirements for the degree are as follows:

1. General Education requirements as listed for the B.M. degree.

2. Music theory	Hours
Music 195, 196	9
Music 295, 296	10
Music 471, 571R	6
Music 481, 581R	6
Music 103, 484, 485	8
Music 491	3
Music 407R	3

An additional semester of keyboard harmony is available for those whose schedules permit it.

3. Music performance, ensemble, and conducting:	Hours
Music 160R, 360R (major instrument and/or keyboard)	12
Ensemble	5

The 12 hours in music performance should be used for the refinement of the student's performing sensitivity and the acquisition of substantial keyboard technique. The exact ratio of hours in each of these areas is to be determined by students and their adviser, but a typical case would devote 4 to 6 hours to keyboard and 6 to 8 hours to the major instrument. Where the major instrument is piano, part of the 12 hours should be devoted to the study of an orchestral instrument and/or voice.

4. Composition seminar—16 hours:
   This seminar meets for one hour per week, during which time the student composers examine each other's efforts, discuss issues, hear lectures by various faculty members, meet with visiting composers, hear performances of their works, and engage in such other activities as the teachers of the seminar may devise. In addition to the seminar, a half-hour session with a member of the composition faculty is required of the student composers.
5. Electives—8 hours.

Associate Degree in Piano Pedagogy

This two-year program in piano pedagogy will prepare students to teach beginning piano students in the private studio. The curriculum is essentially the same as the first two years of the four-year program.

	Hours
1. General education requirements	17
2. Religion	8
3. Music theory	
Music 103, 195, 196, 295, 296	21
4. Music Performance	
Music 160R	8
Music 262R	1
Music 263R	1
5. Music pedagogy	
Music 265R	4
6. Electives	3
Recommended: course in child development	

Associate Degree in Church Music

This program is designed to prepare students as Church music leaders. Music skills receive strong emphasis while the students learn Church music literature and develop an understanding of the administration of the stake and ward music programs.

	Hours
1. General education requirements	17
2. Religion	8
3. Music theory	
Music 103, 195, 196, 202, 295, 296	23
4. Music performance	
Music 160R	6
Choral ensemble	2
Music 105, group organ (not for organists)	2
Music 105, group voice (not for vocalists)	2
Music 203	2
5. Electives	3
Recommended: fourth semester of 160R or 374	
6. Piano proficiency of Music 108	

Piano Technician

Supervisor: Lynn H. Hansen

This associate degree program provides special preparation for students desiring to become piano technicians. Graduates from this program can qualify for employment as technicians in piano factories, music companies, schools, and governmental agencies, as well as for self-employment. Students desiring to enter this program must satisfactorily pass the auditory perception test and secure the approval of the program supervisor.

Graduate Program

Programs. Master of Music (M.M.), Master of Arts (M.A.), Doctor of Philosophy (Ph.D.).

Entrance Examination Required.

1. Music Department Graduate Entrance Examination. presupposes the information and skills of two years of music theory. Given on the day preceding registration (excluding Sunday) for the Fall Semester and Summer Term and at other times by special arrangement with BYU Testing Center (3002 HBLL).
2. Graduate Entrance Performance Audition: for majors or minors in performance
3. Doctoral Admissions Examination composed of the Advanced Music Test of GRE and an oral examination (required of doctoral students only).

Application Consideration Dates. Same as Graduate School deadlines.

Entry Times: Any regular registration.

Master of Music

Prerequisite (Except for Conducting Specialty). A bachelor's degree in music performance or the equivalent.

Prerequisite for Conducting Specialty. A bachelor's degree in music education or evidence of sufficient training and experience in conducting and ability to play simple scores at the keyboard.

Field. Music performance.

Minors Permissible. Option 2 only.

Requirements. Minimum of 32 semester hours, including a scholarly paper and a recital.

Required Courses (except for conducting specialty). Music 565, 566R (4 hours beyond bachelor's degree program), 613, 633, 634, 635, 660R (each semester), 693, 697A and B, and 3 to 7 hours of electives.

Required Courses for Conducting Specialty. Music 613, 615 or 616, 620R and 621R (6 hours), 633, 634, 635, 648R, 660R (4 hours), 693, 694R, 697A and B, and 2 hours of ensemble.

The Master of Music degree is in preparation for performance, for advanced private instruction, and for further study at the doctoral level.

Master of Music

Field. Music education.

Prerequisite. Certified music teacher.

Minors Permissible. Option 1, any approved minor; Option 2.

Requirements. Minimum of 36 hours (this includes a professional improvement project).

Required Courses. Music 605, 610, 612, 613, 633, 634, 635, 693, 680R.

Master of Arts

Prerequisite. A bachelor's degree in music in respective majors or the equivalent.

Fields. Music education, musicology, music theory, and composition.*

Minors Permissible. Option 1 or Option 2.

Requirements. Minimum of 24 semester hours plus thesis (6-hr. min.—698R or 699R).

Required Courses

Music Education: Music 605, 610, 612, 613, 633, 634, 635, 693, 699R.

Musicology: Music 613, 635, 693, 699R, and any 12 (Option 2) or 15 (Option 1) hours from the following classes: 636, 637, 638, 639, 640, and 675.

Music Theory: Music 586, 591R, 613, 633, 634, 635, 675, 693, and 698R or 699R.

*A student majoring in music theory who has had substantial experience in composition may, with the permission of the Music Department graduate faculty, submit a major composition to fulfill the thesis requirement for the Master of Arts degree.

The Master of Arts degree is in preparation for (1) further study and research at the doctoral level; (2) teaching and/or supervision at the elementary, secondary, and junior college levels; (3) composition; and (4) background in many related fields, such as community recreation, therapy, church music, merchandising, broadcasting, and music criticism.

Doctor of Philosophy

Prerequisite: A master's degree in music or the equivalent.

Fields. Music.

Minors Permissible. Any approved minor.

Requirements. Minimum of 68 semester hours plus dissertation (18-hr. min.—799R).

Required Courses. Music 605, 612, 613, 635, 693, 699R (or 697R or 698), 785, 794R, 13 hours from the following: 633, 634, 636, 637, 638, 639, 640, 641R, 675, 754; and 3 hours from the following: 586, 591R.

The Doctor of Philosophy degree is in preparation for junior college, college, university, or conservatory teaching or administration; research; or composition.

Courses

95R. Ear-Training Review for Graduate Students. (0:4:0)

Listening skills relating to diatonic and chromatic elements of music.

96R. Theory Review for Graduate Students. (0:3:0)

Part writing and analysis of diatonic and chromatic elements of music and form.

101. Introduction to Music. (3:3:0) (G-HA)

Concepts of melody, rhythm, harmony, form, styles, etc., as a basis for understanding and enjoying masterpieces of the musical eras. Open to all students without previous training in music.

103. Survey of Music Literature. (2:2:0) (G-HA m) Prerequisite: for nonmusic majors and minors—Music 101 or equivalent.

History of music, including styles, forms, and mediums from the Middle Ages to the present.

105R. Group Performance Instruction. (2:0:0 ea.) Home Study also.

Class instruction for beginners in voice, piano, organ, and instrumental music.

107, 108. Group Piano Instruction. (2:2:0 ea.)

Prepares music majors and minors to pass the functional piano proficiency examination. Not open to piano majors. Minimum of one hour daily practice required outside of class.

110R. University Chorale. (1:0:5 ea.)

116R. Male Chorus. (1:0:5 ea.) Prerequisite: consent of director.

119R. Women's Chorus. (1:0:5 ea.) Prerequisite: consent of director.

125R. A Cappella Choir. (1:0:6 ea.) Prerequisite: consent of director.

128R. Music Theater Chorus. (1:0:5 ea.) Prerequisite: consent of director.

Open to all students selected by audition to participate in the chorus of Music Theater.

129R. Music Theater Performance. (1:2:4 ea.) Prerequisite: consent of director.

Participation as soloists, coaches, or directors in Music Theater performances. Analyzing current semester's repertoire and performances.

131R. Oratorio Choir. (1:0:5 ea.) Prerequisite: consent of director.

135R. Varsity and Marching Band. (1:0:5 ea.) Prerequisite: consent of director.

138R. Concert Band. (1:0:5 ea.) Prerequisite: consent of director.

144R. Jazz Ensemble. (1:0:5 ea.) Prerequisite: consent of director.

147R. Symphony Orchestra. (1:0:5 ea.) Prerequisite: consent of director.

148R. Chamber Orchestra. (½:0:2 ea.) Prerequisite: consent of director.

Repertoire for small orchestra, chosen from all periods, explored and prepared for performance.

149R. Introduction to Concert Music. (1.1:0 ea.)

Illustrated lectures to prepare for selected concert attendance before each concert or recital.

150R. Chamber Music: Brass, Piano, Ancient Instrument, String, Vocal, Percussion, or Woodwind Ensemble. (½:0:0)

159R. Private Instruction. (2:1:0 ea.)
Fourteen half-hour lessons per semester. One to two hours of daily practice. Nonmusic majors only. Special fee.

Brass-Trumpet, Cornet, French Horn, Trombone, Baritone, Tuba:	Dayley, R. Laycock, Unsworth, Bachelder
Harpischord:	Mathiesen, Wakefield
Organ:	Belnap, Cundick, Foxley, Keeler, Longhurst Manookin
Percussion:	Powley
Piano:	Anderson, Davis, Foxley, Nibley, Pollei, Smith, Wakefield
Recorder:	Mathiesen, Wakefield
Strings—Violin, Viola, Cello, String Bass, Classical Guitar, Harp:	Dalton, Goodman, Kalt, H. Laycock, Nordgren, McIntosh, Sardoni
Voice:	Arbizu, Curtis, Davis, Downs, Earl, Gibbons Harris, Webb, Woodward
Woodwinds—Flute, Oboe, Clarinet, Bassoon, Saxophone:	Randall, Stubbs, Wight, Williams

160R. Private Instruction. (2:1:0 ea.) Prerequisite: admission by audition.
Fourteen 45-minute lessons per semester. One to three hours of daily practice required. Majors only. Special fee. (For instructors see Music 159R.)

163. History and Development of the Piano. (3:3:0) Prerequisite: consent of instructor.
Musical and technical development of the piano and its ancestral instruments in their social contexts through the present day.

164. Piano Tuning Theory. (2:2:0) Prerequisites: Music 163, consent of instructor, and special auditory test.
Theory of piano keyboard temperaments. Includes Pythagorean, Equal Aron's (Just), Marpurg's (Meantone), and tool use.

165, 166. Diction for Singers. (1:1:1 ea.) Prerequisite: should be taken concurrently with private or group voice study. Music 165 a prerequisite for Music 166. Required for all voice performance majors. Music education voice specialty required to take 165 only.
First semester: English, Italian, and Latin diction as related to singing. Second semester: German and French diction as related to singing.

167. Organ Problems (2:2:0)
Registration, accompaniment playing, and related problems.

175. Piano Tuning Laboratory. (3:1:7) Prerequisites: Music 163, and concurrent registration in Music 164.
At least seven supervised hours of weekly piano tuning experience. A minimum of four pianos tuned per week by each student.

187. Beginning Composition. (2:1:2 ea.)

195. Expanding Musicianship Core 1. (4:3:2)
Experience in performing, creating, analyzing, evaluating, and teaching music. For majors and minors.

196. Expanding Musicianship Core 2. (5:3:3) Prerequisite: Music 195.
Continuation of Music 195. Majors and minors.

200R. Expanding Musicianship Resource Modules. (½-5:0:0 ea.)
Information and skills taken concurrently with the Expanding Musicianship Core; modules selected according to the student's needs.

201. Baton Technique and Hymnody. (2:2:0)
Fundamental concepts and skills of baton technique and congregational hymn singing and conducting. Open to all students.

202. Essentials in Conducting. (2:2:0) Prerequsite: Music 196.
The fundamental course for the development of complete body skills and coordinations necessary for the conductor.

203. Church Music Practicum. (2:2:1) Prerequisites: Music 195, 196, and 200R, or equivalent conducting experience.
Becoming better conductors, learning Church music literature, developing music administrative skills, and understanding the total ward music program.

207. Group Piano Instruction (Third Semester). (2:2:0) Prerequisites: Music 107 and 108.
Designed for music education majors who need additional keyboard experience. Not open to piano majors.

208. Group Piano Instruction (Fourth Semester). (2:2:0) Prerequisites: Music 107, 108, and 207.
Designed for music education majors who need additional keyboard experience. Not open to piano majors.

262R. Piano Sightreading. (1:1:2 ea.)

263R. Piano Accompaniment. (1:1:2 ea.)
Study and practical application of the basic aspects of accompanying.

264. Piano Technology. (2:2:0) Prerequisites: Music 164, 175.
Relating every part of the piano to the whole; mechanical regulation of action, pedal traps, care, and general maintenance.

265R. Elementary Pedagogy. (2:2:1 ea.) Prerequisite: student must be a music pedagogy major.
Performance pedagogy for beginning study and supervised private teaching.

275. Piano Tuning and Technical Laboratory. (3:1:7) Prerequisites: Music 164, 175.
Advanced tuning and mechanical mastery of piano regulating. Weekly minimum (7 hours) of four pianos regulated or tuned.

276. Fine Tuning and Regulating Laboratory. (4:1:9) Prerequisites: Music 264, 275.
Both uprights and grands.

277. Music Education Core. (4:Arr.:Arr.) Prerequisites: Music 195 and 196.
Provides exploratory study of competencies required for effective music education in the public schools. Allows for decisions concerning professional careers in music education.

280. Elementary Music: Personal Competencies. (½-2:0:0 ea.) Prerequisite: consent of ElEd department and Teacher Clearance Office.
Classes meet twice a week for 3½ weeks with optional help session once a week.

295. Expanding Musicianship Core 3. (5:3:3) Prerequisite: Music 196.
Continuation of Music 196. Majors only.

296. Expanding Musicianship Core 4. (5:3:3) Prerequisite: Music 295.
Continuation of Music 295. Majors only.

303. World Music Cultures. (1:0:5)

310R. University Chorale. (1:0:5 ea.)

316R. Male Chorus. (1:0:5 ea.) Prerequisite: consent of director.

319R. Women's Chorus. (1:0:5 ea.) Prerequisite consent of director.

325R. A Cappella Choir. (1:0:6 ea.) Prerequisite: consent of director.

328R. Music Theater Chorus. (1:0:5 ea.) Prerequisite: consent of director.
Open to all students selected by audition to participate in the chorus of Music Theater.

329R. Music Theater Performance. (1:2:4 ea.) Prerequisite: consent of director.
Participation as soloists, coaches, or directors in Music Theater performances. Analyzing semester's repertoire and performances.

331R. Oratorio Choir. (1:0:5 ea.) Prerequisite: consent of director

335R. Varsity and Marching Band. (1:0:5 ea.) Prerequisite: consent of director.

336. Fundamentals and Techniques of Marching Band. (2:2:2) Prerequisite: Music 296.
Planning, charting, and scoring music for marching bands. For music education majors.

338R. Concert Band. (1:0:5 ea.) Prerequisite: consent of director.

344R. Jazz Ensemble. (1:0:5 ea.) Prerequisite: consent of director.

347R. Symphony Orchestra. (1:0:5 ea.) Prerequisite: consent of director.

348R. Chamber Orchestra. (½:0:2 ea.) Prerequisite: consent of director.

349R. Collegium Musicum. (2:Arr..Arr. ea.) Prerequisite: music major or consent of instructor.
Seminar in performance practice and practical editorial techniques for music. Presenting treatment of selected compositions according to applicable performance practice theories. Group practical notation projects.

350R. Chamber Music: Brass, Piano, Ancient Instrument, String, Vocal, or Woodwind Ensemble. (½:0:3 ea.)

359R. Private Instruction. (2:1:0 ea.)
Nonmusic majors only. Fourteen 45-minute lessons per semester. One to two hours of daily practice required. Special fee. (For instructors see Music 159R.)

360R. Private Instruction. (2:1:0 ea.) Prerequisite: pass sophomore proficiency standards.
Fourteen 45-minute lessons per semester. Two hours of daily practice required. Majors only. Special fee. (For instructors see Music 159R.)

363, 364. Vocal Workshop. (1:0:2 ea.) Prerequisite: Music 363 must be taken before 364.
Voice building, problems of solo and group singing, and survey of solo and small ensemble literature. For music education majors with instrumental specialties only.

367. Percussion Workshop. (1:0:3) Prerequisite: Music 196 or equivalent.
Learning to play and to teach percussion instruments; survey of materials. For music education majors.

368. Woodwind Workshop. (2:0:5) Prerequisite: Music 196 or equivalent.
Learning to play and to teach woodwind instruments; survey of materials. For music education majors.

370. Brass Workshop. (2:0:5) Prerequisite: Music 196 or equivalent.
Learning to play and to teach brass instruments; survey of materials. For music education majors.

372. String Workshop. (2:0:5) Prerequisite: Music 196 or equivalent.
Learning to play and to teach string instruments; survey of materials. For music education majors.

374A,B. Choral Practicum. (2:Arr.:Arr. ea.) Prerequisites: Music 277 or 363; Music 364 or equivalent.
Develops some of the competencies for teaching school choral ensembles.

375A,B. Instrumental Practicum. (2:Arr.:Arr. ea.)
Develops some needed competencies for teaching school instrumental ensembles.

380. Elementary Music: Methods with Children. (2:0:0) Prerequisite: satisfaction of Music 280 competencies.
Effective methods for teaching music to children.

387R. Advanced Composition. (2:1:1 ea.) Prerequisite: Music 187.

407. Keyboard Harmony. (3:3:0) Prerequisite: Music 196 and moderately advanced keyboard technique.
Harmonization of figured and unfigured basses and other voices; cadences, sequences, transpositions, modulations, and improvisations at the keyboard.

421. Materials and Music Literature for the Elementary Child. (1:1:1) Prerequisite: Music 345.
Developing a basic repertoire of children's songs. For the elementary education music minor.

463R. Piano Accompanying. (1:0:3 ea.)

468. Organ Problems. (2:2:0) Prerequisites: Music 167, advanced standing as an organ student, and consent of instructor.
Registration, accompaniment playing, and related problems.

471. Introduction to Counterpoint. (3:3:0) Prerequisite: Music 296.

479. Secondary Student Teaching. (1-8:0:40) Prerequisite: Music 377.
See SecEd. 479.

481. Introduction to Orchestration. (3:3:0) Prerequisite: Music 296.

484. History of Music. (3:3:0) (G-HA) Prerequisites: Music 296 (music majors), or Music 101, or equivalent (nonmajors).
Historical-analytical study of Western music from antiquity to the death of Bach, considered within the broader cultural-intellectual traditions of Western civilization.

485. History of Music. (3:3:0) (G-HA) Prerequisites: Music 296 (music majors), or Music 101, or equivalent (nonmajors).
Historical-analytical study of Western music from the preclassical era to the present, considered within the broader cultural-intellectual traditions of Western civilization. Continuation of Music 484.

491. Analytical Techniques. (3:3:0) Prerequisite: Music 296.

494R. Independent Readings. (1-3:Arr.:Arr.)

495R. Seminar in Music Theory. (3:Arr.:0 ea.) Prerequisite: senior standing in music theory.
Two semesters required for music theory majors. Recognizing processes by which the basic elements of music are organized into compositions of various forms and styles.

507R. Advanced Topics in Keyboard Harmony. (3:3:0 ea.) Prerequisite: Music 391.
Topics vary.

537. Music for Elementary School Teachers. (2:2:0) Prerequisite: Music 345 or elementary teaching experience.
Experiences in teaching various music activities in the elementary school.

565R. Pedagogy. (2:2:0 ea.) Prerequisite: advanced standing in performance.
Comprehensive study of performance pedagogy for major instrument or voice and supervised private teaching.

566R. Applied Music Literature. (2:2:0 ea.) Prerequisite: senior standing as a performance music major.
Intensive study of literature for major instrument. Offered for senior and graduate students in performance.

571R. Advanced Topics in Counterpoint. (3:3:0 ea.) Prerequisite: Music 296.

581R. Advanced Topics in Orchestration. (3:3:0 ea.) Prerequisite: Music 296.

586. Pedagogy of Music Theory. (3:3:0) Prerequisite: Music 296.

587R. Composition. (3:3:0 ea.) Prerequisite: Music 296, 387R.

591R. Advanced Topics in Analysis. (3:3:0 ea.) Prerequisite: Music 491.

601. Music in the Elementary School. (2:2:0) Prerequisites: Music 380 and the equivalent of an elementary education teaching minor in music.

603. Music in the Junior High School. (2:2:0) Prerequisite: Music 601.

605. Influence of Music on Behavior. (3:3:0) Prerequisite: general psychology, sociology, or equivalent.

610. Supervision and Administration of Music in the Public Schools. (2:2:0)

612. Music Education in Society. (3:3:0) Prerequisites: Music 484, 485, or equivalent.

613. Basic Concepts in Music Education. (2:2:0)
Required of all candidates for graduate music degrees.

615. Vocal Methods, Materials, and Resources. (2:2:0) Prerequisite: Music 479 or equivalent.

616. Instrumental Methods, Materials, and Resources. (2:2:0) Prerequisite: Music 479 or equivalent.

620R. Advanced Instrumental Conducting. (2:2:3 ea.) Prerequisites: Music 296, 374, 375, and 485, or equivalent.

621R. Advanced Choral Conducting. (2:3.3 ea.)

625R. Summer Music Clinic. (1-2:4:4 ea.) (Two weeks during clinic.)

630R. Special Lectures in Music Education. (1-5:5:0 ea.) Prerequisite: certification in music plus teaching experience.

633, 634. History of Musical Style. (2:2:0 ea.) Prerequisite: graduate standing.
Principal developments in styles and forms of Western music from the Middle Ages to today. Required of all candidates for graduate music degrees except musicology majors.

635. Musical Research Techniques. (3:3:0) Prerequisite: graduate standing or consent of instructor.
Required of all candidates for graduate music degrees. Should be taken in first semester of graduate work.

636. Music in the Middle Ages. (3:3:0) Prerequisites: Music 484, 485, or equivalent.

637. Music in the Renaissance. (3:3:0) Prerequisites: Music 484, 485, or equivalent.

638. Music in the Baroque Era. (3:3:0) Prerequisites: Music 484, 485, or equivalent.

639. Music in the Classic Period. (3.3:0) Prerequisites: Music 484, 485, or equivalent.

640. Music in the Romantic Period. (3:3:0) Prerequisites: Music 484, 485, or equivalent.

641R. Lectures in Musicology. (1-3:2:0 ea.) Prerequisites: Music 484, 485, or equivalent.

648R. Collegium Musicum. (2:Arr.:Arr. ea.) Prerequisite: consent of director.
Practical experience in designing programs, outlining music, and preparing program notes for medieval to modern music.

652. History of Notation and Paleography. (3.3:0) Prerequisites: Music 484, 485, 636, or equivalent

660R. Graduate Private Instruction. (2:1:0 ea.) Prerequisite: completion of undergraduate performance proficiency requirements and audition.
Fourteen 45-minute lessons per semester. Three hours of daily practice required. Special fee. (For instructors see Music 159R.)

663. Solo Recital. (2:1.0)
One period per week with private teachers, 2-3 hours per day, plus public performance of the recital Required of all graduate students minoring in performance. Special fee.

675. Music of the Contemporary Period. (3:3.0) Prerequisites: Music 484, 485, or equivalent.
Twentieth-century music, including its relationship to the past and its sociological, psychological, and philosophical implications for the present day.

680R. Professional Improvement Project. (3-5:Arr.:Arr.)
Field project for students pursuing Master of Music degree in music education.

687R. Composition. (3:3:0 ea.) Prerequisite: Music 588 or equivalent.

693. Proseminar in Music. (2:2:0) Prerequisites: Music 484, 485, 635, or equivalent, and approval of advisory committee.
Required of all candidates for graduate music degrees. Should be taken in second semester of graduate work.

694R. Independent Readings. (1-3:Arr.:Arr. ea.) Prerequisite: Music 693 or equivalent.

697A. Scholarly Paper for Master of Music Degree. (2:Arr.:Arr.) Prerequisites: approval of advisory committee and graduate music faculty.

697B. Recital for Master of Music Degree. (2:Arr.:Arr.) Prerequisites: Music 697A and approval of advisory committee and graduate music faculty.

698. Composition for Master's Degree. (6:Arr..Arr.) Prerequisite. approval of the Music Department graduate faculty, based upon evidence of ability in composition as manifested in a preliminary work.
To be submitted by candidates for the master's degree majoring in theory with a composition emphasis.

699R. Master's Thesis. (6-9.Arr..Arr. ea.) Prerequisite: approval of the Music Department graduate faculty.
Candidates for the master's degree must show competence in writing and research before beginning work on thesis.

753. Advanced Problems in Notation. (3:3:0) Prerequisite: Music 652.
Offered same year as Music 652.

754. History of Musical Instrments. (3:3:0) Prerequisites: Music 484, 485, or equivalent.
Offered alternate years.

785. Historical Aspects of Music Theory. (3.3:0) Prerequisite: Music 296, 484, and 485 or equivalents.
Offered alternate years.

794R. Seminar in Music. (1-3.Arr.:0 ea.) Prerequisites: Music 635, 693, or equivalent, and approval of graduate advisory committee.

799R. Doctoral Dissertation. (6-9.Arr.:Arr. ea.) Prereqrequisite: approval of graduate advisory faculty.

Nursing

Professors: Cope (Dean, 2240 SFLC), Dyer, Van Drimmelen, Wood.
Associate Professors: Alley, Betteridge, M. Harris, Isaacs, Jensen, Leifson, Lyons, May, E. Murphy, Schmidt, Tillery, Vance.
Assistant Professors: Allen, Andersen, Bartholomew, Chaffin, Drake, Hammond, S. Harris, Jorgensen, Kennington, Mandleco, M. Murphy, Porter, Richardson, Riddle, Roland, Rushton, Wiker, Willhite, Williams, Yencho.
Instructors: Groberg, Rae, Reed.

Undergraduate Program

Service Courses

Nurs. 288, Family Health and Home Nursing, and Nurs. 425, Home Nursing Instructorship, are offered by the College of Nursing for students in other majors

Curriculum

The College of Nursing offers a program divided into two phases leading to the following degrees: Associate Degree (A.D.) and Bachelor of Science (B.S.). The A.D. degree phase is designed for students who want to be able to provide general nursing care in a variety of health-illness situations and who desire to complete the B.S. degree without loss of time or credits. The B.S. degree phase prepares students to be generalists in primary-care nursing practice on a professional level in various health-care situations and settings.

The combined program of two phases forms a modified self-paced, individualized curriculum that allows for multiple entrances and exits and provides for career mobility from technical through professional nursing practice without loss of time or credits.

Students are eligible to take the licensing examinations to become a registered nurse after the completion of the A.D. or the B.S. phases, whichever they choose.

The suggested sequence of courses for the A.D. and B.S. phases follow. See the general education programs section of this catalog for additional requirements.

Associate Degree Phase Courses

First Semester	Hours
Chem. 102	5
Zool. 260, 261	3,4
Psych. 111	3
Second Semester	
Micro. 321, 322	4
Nurs. 100, 106	1,7
FSN 115	2
Third Semester	
CDFR 210	3
Nurs. 156	7
PhySci. 100	3
Engl. 115	4
Fourth Semester	
Nurs. 206, 390R	7,1
Sociol. 350	3
Math. 100D	2
Humanities	3
Fifth Semester	
Nurs. 256, 257	8,1
Humanities	3
SocSci. 100	3

Baccalaureate Degree Phase Courses

The schedule for the baccalaureate phase is as follows:

Sixth Semester	Hours
Chem. 281	3
Zool. 361	4
Nurs. 306	3
Nurs. 416R	2-6
Seventh Semester	
Stat. 221 or 552	3
Nurs. 356	7
Nurs. 390R	1
Engl. 315 or 316	3
Eighth Semester	
Nurs. 406	7
Nurs. 390R	1
Elective core	3
Ninth Semester	
Nurs. 456	7
Nurs. 390R	2
Humanities	3
Elective core	3

Prospective Students

Prospective nursing students are advised to take the following courses in high school: three or four units of English, intermediate algebra, geometry, chemistry, biology, and physics.

For admission to the College of Nursing's clinical program, see Admission Policies and Criteria under College of Nursing in the Colleges section.

Transfer Students

Students may find little correspondence between nursing requirements at BYU and some other schools. To avoid unnecessary delay, prospective nursing majors should consider initial enrollment at BYU. Those enrolling elsewhere, but who expect to transfer to BYU, should contact the College of Nursing Advisement Center before beginning work at another institution. Also, placement of transfer students in the nursing major is done on an individual basis and requires application to the College of Nursing Advisement Center.

Special Examinations

All students entering Nurs. 106 are required to take a four-hour battery of tests administered through the research component of the College of Nursing. Data from the tests are being compiled for a long-term study of prediction of success in nursing. National examinations are also given periodically.

Grade Requirement

Students must earn a C or above in each of the courses to remain in the program.

Graduate Program

Program. Master of Nursing.

Entrance Examination Required. Verbal and quantitative portions of the Graduate Record Examination.

Applications Consideration Date: Same as Graduate School deadlines.

Entry Times: Any regular registration.

Master of Nursing

Prerequisites. A baccalaureate degree in nursing from an NLN accredited program, and current R.N. licensure in any state. The following undergraduate courses or equivalent: Stat. 221 or 552, Zool. 361, Chem. 281, and Nurs. 306 and 416R.

Fields. Clinical specialization in cardiovascular nursing, family nursing, neurological nursing, or onocological nursing.

Requirements for Graduation. Minimum of 30 semester hours. Nurs. 500 and above plus thesis or project (6-hr. min.).

Required Courses. Nurs. 500, 504, 506, 508, 512, 517, 595R, 597, or 699R, plus courses in the specialty area.

Courses

100. Introduction to Professional Behavior. (1:1:0) Prerequisite: concurrent registration in Nurs. 106.

Overview of nursing, emphasizing professional responsibilities.

106. Nursing 1. (7:2:15) Prerequisites: Chem. 102, Psych. 111, Zool. 260 and 261; completion of or concurrent registration in Micro. 321, 322.

Study of healthy and ill individuals and establishment of nurse-patient relationships. Assessment of adaptive processes and development of related technical skills.

156. Nursing 2. (6:2:11). Prerequisites: Concurrent registration in CDFR 210, Physical Science 100, English 115.

Experiences in providing care to individuals with moderately complex medical-surgical problems.

157. Pharmacology in Nursing 2. (1:1:0) Prerequisite: concurrent registration in Nurs. 156.

Fundamentals of pharmacology and clinical application associated with administering anti-inflammatory, psychotropic, cardiotonic, and sympathomimetic agents and their interactions.

206. Nursing 3. (7:2:15) Prerequisites: Nurs. 156; concurrent registration in Sociol. 350.

Experience in maternal, newborn, and child nursing.

207. Pharmacology in Nursing 1. (1:1:0) Prerequisite: concurrent registration in Nurs. 206.

Fundamentals of pharmacology and clinical application associated with administering antibiotics and drugs affecting the body hormonal system, hematologic system, and nervous system.

256. Nursing 4. (8:2:18) Prerequisites: Nurs. 206; concurrent registration in Nurs. 257.
Experiences with the team in providing care to patients with complex medical-surgical and psychiatric problems.

257. Professional Development. (1:1:0) Prerequisites: Nurs. 206 and concurrent registration in Nurs. 256.
Concepts related to professional development, including contemporary issues and trends in nursing education, service, and professional organizations.

288. Family Health and Home Nursing. (2:2:0) Home Study also.
For nonmajors. Essential knowledge and attitudes about healthful family living; skills in home nursing care for sick or injured; essentials of maternal health and child care.

306. Nursing 5. (3:1:8) Prerequisite: Nurs. 256 or equivalent; concurrent registration or completion of Chem. 281 and Zool. 361.
Using physiological, psychological, and sociological principles in primary-care nursing experiences.

356. Nursing 6. (7:2:16) Prerequisites: Nurs. 306; concurrent registration in Nurs. 390R.
Emphasizes primary care in areas of defined nursing practice: emergencies, intensive care, rehabilitation.

357. Nursing Research 1. (1:1:0) Prerequisites: Nurs. 306 and concurrent registration in Nurs. 356.
Guided experience in original nursing research, development of a question, and determining methodology.

390R. Independent Study in the Practice of Nursing. (1-4:Arr.:Arr. ea.) Prerequisite: consent of instructor.

406. Nursing 7. (7:2:18) Prerequisites: Nurs. 356; concurrent registration in Nurs. 390R.
Using public health principles to provide a broad range of community health nursing services.

407. Nursing Research 2. (1:1:0) Prerequisites: Nurs. 356, 357, and concurrent registration in 406.
Guided experience in original nursing research, through data collection and written report using the scientific format.

410R. Nursing Practicum Workshop. (1-6:Arr.:Arr. ea.)

416R. Preceptorship in Primary Care Nursing. (1-6:Arr.:Arr. ea.) Prerequisites: Nurs. 256 or equivalent; concurrent registration in Nurs. 306 and consent of instructor.
Clinical experience with nurse practitioners and physicians in applying primary care principles.

425. Home Nursing Instructorship. (2:2:1) Prerequisite: completion of SecEd. 276 or consent of instructor.
Performing and teaching basic home-nursing procedures necessary in the care of the sick and injured and in mother and baby care.

456. Nursing 6. (7:1:18) Prerequisites: Nurs. 406 and concurrent registration in Nurs. 390R.
Applying leadership principles in the comprehensive delivery of health care in an area of student's choice.

500A,B. Advanced Biophysical Assessment in Nursing. (3:Arr.:Arr. ea.) Prerequisites: prior or concurrent registration in Nurs. 506 and 508; graduate standing.
Advanced anatomical, physiological, psychosocial, and biochemical principles in assessment, management, evaluation of patients with various medical conditions

504. Psychosocial Nursing. (3:Arr.:Arr.) Prerequisite: prior or concurrent registration in Nurs. 500A; graduate standing.
Evaluation of psychosocial status of patients. Includes administering mental health status examinations, evaluation, treatment, and referral.

506. Pathology and Biochemical Disorders Related to Nursing Management. (3:3:0) Prerequisite: consent of instructor or graduate standing.
Understanding biochemistry, relating biochemical concepts to the course, and compensatory reactions of pathology and disease processes and laboratory tests.

508. Pharmacology Applied to Nursing Management. (1-2:2:0) Prerequisite: consent of instructor or graduate standing
Concepts of clinical pharmacology, principles of rational drug therapy, drug therapy monitoring.

508R. The Pharmacological Basis of Nursing Management.(1-2:2:0) Prerequisite: consent of instructor.
Chemical composition, physiologic action, and therapeutic application of drugs.

512R. Teaching in Clinical Nursing Specialties. (1-6:6:Arr.) Prerequisite: graduate standing.
Utilizing tools of conceptual framework of curriculum to develop, implement, evaluate teaching experience relating to clinical specialty.

517. Research Design and Methodology in Nursing. (2:2:0 ea.) Prerequisite: graduate standing and Stat. 221 or 552.
Philosophy, problems of design, statistical test, and scales in developing individual research projects.

520. Concepts in Family Nursing: Obstetrics. (4-6:3:9) Prerequisites: Nurs. 500A,B, 504, 506, 508, 517, 523, and 524; concurrent registration in 521; graduate standing.
Promotion of family health during reproductive years; including antepartal, intrapartal, postpartal, interpartal periods. Includes clinical practice.

521. Concepts in Family Nursing: Pediatrics. (4-6:3:9) Prerequisites: Nurs. 500A,B, 504, 506, 508, 517, 523, and 524; concurrent registration in 520; graduate standing.
Promotion of family health when needs are around growing family. Includes clinical practice.

522. Concepts in Family Nursing: Geriatrics. (4-6:3:9) Prerequisites: Nurs. 500A,B, 504, 506, and 508; graduate standing.
All aspects of aging in relationship to physiological, psychosocial, environmental, chronic disease. Includes clinical practice.

523. Community-based Nursing and Health Services. (2:2:3) Prerequisites: Nurs. 500A,B, 504, 506, 508; concurrent registration in Nurs. 520, 521, or 522; graduate standing.
Health delivery systems on international, national, state, community level with focus on nurse's role in community setting. Identification evaluation of family health needs.

524. Theories in Family Nursing. (2:Arr.:Arr.) Prerequisite: Nurs. 500A,B, 520, 521, 522, and 523
Defining and analyzing basic family theories and implications in each stage of family life span; includes applications for nursing.

527. Family Health Practicum. (4:Arr.:Arr.) Prerequisites: Nurs. 500A,B, 520, 521, 522, and 523.
Applying family practice principles in a self-selected clinical setting

530. Concepts in Nursing: Cardiovascular Pathology and Clinical Nursing Applications in Adults and Children 1. (2-3:3:0) Prerequisites: Nurs. 500A, 504, 506, and 508; concurrent registration in Nurs. 599R; graduate standing
Correlation of normal physiology to pathophysiological changes occurring in patients with medical and surgical cardiovascular problems.

531. Concepts in Nursing: Cardiovascular Pathology and Clinical Nursing Applications in Adults and Children 2. (2-3:3:0) Prerequisites: Nurs. 500A, 504, 506,

508, 530; concurrent registration in Nurs. 599R; graduate standing.
Applied clinical pharmacology, peripheral vascular disorders, crisis situations, pulmonary dysfunctions, congenital disorders occurring in cardiovascular patients.

532. Concepts in Nursing: Cardiovascular Pathology and Clinical Nursing Applications in Adults and Children 3. (2-3:3:0) Prerequisites: Nurs. 500A,B, 504, 506, 508, 530, 531; concurrent registration in 599R; graduate standing.
Correlation and application of appropriate management concepts to specific patient situations.

540. Concepts in Nursing: Neurological Pathology and Clinical Nursing Applications in Adults and Children 1. (2-3:3:0) Prerequisites: Nurs. 500A, 504, 506, 508; concurrent registration in Nurs. 599R; graduate standing.
Assessment of normal growth and development throughout life cycle, emphasizing neurological functioning. Deviations from normal, and recommendations for appropriate diagnostic testing and treatment.

541. Concepts in Nursing: Neurological Pathology and Clinical Nursing Applications in Adults and Children 2. (2-3:3:0) Prerequisites: Nurs. 500A, 504, 506, 508, 540; concurrent registration in 599R; graduate standing.
Assessment of needs of specific neurological patients and families. Emphasis on rehabilitation process and optimizing independent functioning.

542. Concepts in Nursing: Neurological Pathology and Clinical Nursing Applications in Adults and Children 3. (2-3:3:0) Prerequisites: Nurs. 500A, 504, 506, 508, 540, 541; concurrent registration in Nurs. 599R; graduate standing.
Using principles relating to assessment, management of patients with neurological dysfunctions. Specific neurological problems studied by taking elective modules.

550. Concepts in Nursing: Oncological Pathology and Clinical Nursing Applications in Adults and Children 1. (2-3:3:0) Prerequisites: Nurs. 500A, 504, 506, 508; concurrent registration in Nurs. 599R; graduate standing.
Theory, assessment, management, and provision of comprehensive care of patients with malignancy.

551. Concepts in Nursing: Oncological Pathology and Clinical Nursing Applications in Adults and Children 2. (2-3:3:0) Prerequisites: Nurs. 500A, 504, 506, 508, 550; concurrent registration in 599R; graduate standing.
Theory, assessment, management, and provision of comprehensive care of the patient with malignancy.

552. Concepts in Nursing: Oncological Pathology and Clinical Nursing Applications in Adults and Children 3. (2-3:3:0) Prerequisites: Nurs. 500A, 504, 506, 508, 550, 551; concurrent registration in Nurs. 599R; graduate standing.
Theory, assessment, management, and provision of comprehensive care of patient with malignancy.

595R. Development of Professional Behavior Seminars. (1:Arr.:0) Prerequisite: graduate standing.
Nursing theories and social issues of the profession.

597R. Independent Studies. (1-6:Arr.:Arr.)
Master's project.

599R. Nursing Practicum. (1-3:0:1-12 ea.) Prerequisite: consent of instructor, concurrent enrollment in Nurs. 530, 531, 532, 540, 541, 542, 550, 551 or 552; graduate standing.
Managing care of patients with health problems in specialty areas in a variety of settings (clinics, hospitals, community).

699R. Master's Thesis. (1-6:Arr.:Arr. ea.) Prerequisites: Nurs. 517 and consent of adviser.

Organizational Behavior

Professors: Dalton, Daniels (Psychology), Dyer, Moffitt.
Associate Professors: Cherrington, Covey, Ritchie, Thompson (Chairman, 302 JKB).
Assistant Professors: Woodworth, Wright (Political Science).

The Department of Organizational Behavior has as a major objective the training of persons who will be working in organizations and whose concern is building systems that will better meet the needs of people and accomplish the organizational goals. Professional development in this field centers on understanding the nature of organizations as systems, the management process, organization change and development, and the role of the organizational change agent. This program will lead to careers in personnel management, management training, organization development, industrial relations, organization consulting, and research and teaching in the area of organizational behavior.

Undergraduate Program

There is no undergraduate degree available in the Department of Organizational Behavior. Undergraduate classes (OrgB. 321, 357, 358, 410, 421, 425) are offered to students who are interested in preparing themselves in areas of leadership in many different fields.

Graduate Program

Program. Master of Organizational Behavior.

Master of Organizational Behavior

Prerequisite. Completion of Organizational Behavior Department professional stem.

The graduate program in the department is divided into two stems. The management development stem is geared primarily to the training of those persons in the Master of Business Administration, Master of Public Administration, and other graduate programs to fulfill positions at the management and administrative levels. The program is action based and designed to help students develop effective management and development skills. Students who complete work in the management development stem should be better able to (1) diagnose human and organizational problems, (2) develop skills for working with people to solve these problems, (3) design more effective programs for achieving organizational goals, (4) develop and implement an effective theory and philosophy of management, (5) develop a professional management style which allows them to work effectively in the organization stem, and (6) develop their own personal leadership potential. Classes in the management development stem are OrgB. 321, 358, 421, 425, 523, 610, 625, 640, 660R, 670.

The other stem of the department is the professional stem. It is designed to prepare those people who plan to become professional consultants, trainers, or organization development specialists. The degree is a professional degree and the student will spend two years in a unique program to develop professional skills. Classes in the professional stem are OrgB. 610, 625, 630, 640, 650, 660R, 669, 670, 672, 679, 680, 689R.

This program is flexible and offers students an opportunity to prepare themselves in their selected area of competency. Part of the program includes internship work in a professional capacity for an organization. No thesis is required, but students must prepare and defend a research report on their internship.

While applicants of differing backgrounds may be admitted, it is desirable that they have substantial training in sociology, psychology, statistics, research methods, business management, political science, or related fields. Previous business and work experience is also desirable.

For details concerning admission requirements and application dates, refer to the *Graduate School of Management Bulletin.*

Courses

See Graduate School of Management, Courses for Master of Organizational Behavior, for graduate OB courses.

321. Fundamentals of Organizational Behavior. (3:2:2)
Individual group and organization variables affecting organizational functioning. Topics include motivation, rewards, leadership, conflict, decision making, structure, evalution, and change.

357. Interpersonal Growth and Group Processes. (3:1:4) Prerequisite: Psych. 111 or Sociol. 111.
The building and study of effective interpersonal relationships and group functioning.

358. (OrgB.-Psych.) Leadership Development. (3:2:2)
Principles and practices of successful leadership: decision making, communications, planning, team building, motivation, and interpersonal skills.

410. Careers in Organizations. (3:3:0)
Developing career management skills: self-assessment, finding/evaluating opportunities, defining self-development needs, action planning. Exploring career stages and how individuals find rewarding careers.

421. Management Development 1: Practicum in Small Group Work. (3:0:0)
Working effectively with small groups—cases, actual group work, etc.

425. Personnel Management. (3:0:0) Prerequisite: Org.B. 321.
Dealing with problems and challenges of the personnel manager's office: employee situation, system of compensation, etc.

Personal Development Program

Burton C. Kelly (Director, C-273 ASB)

Undergraduate Program

Although the major emphasis at Brigham Young University is on intellectual and spiritual development, the University is also concerned with the personal and social development of its students. With this in mind, the following list of courses has been compiled as a way of providing information about courses which will assist students with their personal and social development. Many of these courses emphasize learning by doing rather than by traditional educational methods. Most of the courses are taught by faculty from established academic departments and therefore carry academic credit. Further information about this program may be obtained from Personal and Career Services, B-238 ASB.

Courses

☐ **Career Education 115. Life Planning and Decision Making.** (2:2:0) Home Study also. (G-ML)
Experiential class which considers self-awareness, creative thinking, and decision making as related to life and career decisions.

☐ **Career Education 116. Career Exploration.** (1:1:0)
Experiential class applying vocational choice processes and decision-making skills to choice of a major and/or occupational field.

☐ **Career Education 317. Career Skills.** (1:0:1)
Developmental class designed to assist all undergraduates to prepare for, obtain, and maintain optimum employment.

☐ **CDFR 130. Human Social Behavior.** (1:0:2) Prerequisite, freshman standing.
Experiential learning to improve ability to develop close relationships and a more favorable self-concept.

☐ **CDFR 360. Achieving Success in Marriage.** (3:3:0) Home Study also. (G-SS)
Principles and skills which help establish and maintain a quality marital relationship, as applied to mate selection and the early years of marriage.

☐ **Clothing and Textiles 110. Selection and Care.** (2:2:1)
Design elements related to apparel selection; principles of wardrobe planning, buying, and care; personal analysis for self-improvement.

☐ **Communications 100. Human Communication.** (3:3:1) Home Study also. (G-HA)
Theory, philosophy, and practical applications of communicative principles relevent to interpersonal, small-group, and mass communication settings. Recommended for all who wish to communicate more effectively.

Counseling Center. Interpersonal Communication. (0:0:2)
A practical, experimental course conducted in small groups to develop interpersonal skills and train group leaders. Includes the communication process, self-expression, active listening, personal motivation, and interpersonal problem solving.

Counseling Center. Training for Lay Counselors. (0:0:2)
Basic training in counseling techniques for leaders or persons whose responsibility or interest is to assist students.

☐ **General Studies 110. Effective Study and Adjustment to College.** (1:2:0) Home Study also.
Budgeting time, taking notes, reading, listening, using the library, taking examinations, and acquiring motivation and concentration.

☐ **General Studies 121. College Developmental Reading.** (1:1:1) Home Study also.
Improving speed, comprehension, and vocabulary.

☐ **Physical Education 178. Activities for Fitness.** (½:0:2)

☐ **Physical Education 180. American Social Dance, Beginning.** (½:0:2) Home Study also.
Fox-trot, waltz, lindy, cha cha.

☐ **Physical Education 192. Outing Activities.** (½:0:2)
Selected seasonal activities.

☐ **Psychology 240. Personal and Social Adjustment.** (3:2:1) (G-SS) Home Study also.
Prevention and amelioration of mental and personal difficulties.

☐ **Psychology-Sociology 357. Interpersonal Growth and Group Processes.** (3:1:4) Home Study also. Prerequisite: Psych. 111 or Sociol. 111.
Building and systematic study of effective interpersonal relationships and group functioning.

☐ **Recreation Education 123. Introduction to Outdoor Recreation.** (1:0:3)
Participation in a variety of outdoor camping activities.

☐ **Recreation Education 371. Family Recreation.** (2:2:0) Home Study also.
Social activities for small groups and families.

☐ **Recreation Education 387. Planning for Social Recreation.** (2:2:0) Home Study also.
Leadership skills for directing large social groups.

☐ **Religious Instruction 231, 232. The Gospel in Principle and Practice.** (2:2:0 ea.) Home Study also (G-R)
Considering principles of the gospel of Jesus Christ in light of the practical needs and problems of today's youth.

☐ **Youth Leadership 380. Primitive Land Survival.** (2:2:1)
Training to meet the adversity of primitive living without the use of modern equipment and facilities.

Philosophy

Professors: Madsen, Riddle, Warner, Yarn.
Associate Professors: Carter, (Chairman, 121 FOB), Rasmussen.
Assistant Professors: Packard, Paulsen.

Undergraduate Program

The courses offered by the Philosophy Department are designed to achieve the following goals:.

1. To develop the reflective capacities of each student by providing opportunities for the careful study and practice of disciplined, systematic thinking.
2. To introduce the basic philosophical problems and positions both in their historical contexts and in their relation to each other.
3. To emphasize the broad scope of philosophical thinking by demonstrating its concern for the fundamental problems of other disciplines.
4. To prepare students for further study in graduate and professional schools.

Major Requirements

1. Complete one other major in any field.
2. Complete 29 credit hours of philosophy (Phil. 105 excepted). No D credit may be included in this total.
3. Complete the following courses: Phil. 205, 301, 302, and at least two 400-level courses.
4. Complete a senior paper. This paper will be written under the direction of a member of the department and must satisfy departmental standards for quality.
5. Take the Graduate Record Examination in philosophy during the senior year.
6. Though there is no language requirement for the major, students planning to do graduate work in philosophy are urged to obtain a knowledge of German and French; those with special interests in ancient philosophy should also learn Greek and Latin.

Minor

An undergraduate minor may be completed by taking any five philosophy courses (105 excepted).

Graduate Program

Program. Minor only.

Prerequisites. Lower-division courses prerequisite to those chosen for the minor.

Requirements. For master's level, 9 semester hours; for doctoral level, 15 semester hours.

Required Courses. Those specified by philosophy representative on the student's advisory committee.

Courses

105. Evaluating Arguments and Evidence. (3:2:1)
Developing basic intellectual skills required for academic endeavor, including systematic techniques for evaluating evidence and assumptions.

110. Foundations of Philosophical Thought. (3:3:0) (G-HA)
Developing philosophical skills through supervised analysis of readings in such topics as reason, knowledge, metaphysics, ethics, politics, and religion.

201. Ancient and Medieval Origins of Western Philosophy. (3:3:0) (G-HA)
Thematic examination of the early development of Western philosophy through contributions from Greek, Roman, Arab, Jewish, and Christian sources (600 B.C.—A.D. 1500).

202. The Emergence of Modern Philosophy. (3:3:0) (G-HA)
Thematic examination of the birth and development of modern Western philosophy through contributions of continental, British, and American philosophers.

☐ **Honors 204R. Philosophy.** (2-5:0:0 ea.)
Intensive study of topics in philosophy and such related areas as religious and moral thought.

205. Logic and Language. (3:3:0) (G-ML) Home Study also.
Elements of formal logic, the forms of reasoning, and the structure of language.

213. Ethics. (3:3:0) (G-HA)
Nature and justification of moral standards, beliefs, and decisions.

214. Aesthetics. (3:3:0) (G-HA)
Man's experience of beauty in nature, literature, and the fine arts, emphasizing the relationship between beauty and truth.

215. Philosophy of Religion. (3:3:0) (G-HA)
Analyzing problems in religion, including existence and nature of God, alternatives to theism, God's foreknowledge and man's free will, immortality, and religious experience and language.

301. Intensive Ancient and Medieval Philosophy. (6:6:0)
Western philosophy from Thales to the late medieval period, emphasizing Plato, Aristotle, Augustine, and Aquinas.

302. Intensive Modern Philosophy. (6:6:0)
Western philosophy from the sixteenth through the nineteenth century, emphasizing Descartes, Locke, Spinoza, Libniz, Hume, Kant, and Hegel.

305. Intermediate Logic. (3:3:0) (G-ML)
Natural deduction, the paradoxes, reduction of arithmetic to logic, Godel's proofs. Emphasizes philosophical issues connected with these formal topics.

421R. Topics in Philosophy. (2-5:2-5:0 ea.) (G-HA)
Intensive analysis of a selected problem in philosophy, as announced each semester in the Class Schedule.

422R. Figures in Philosophy. (2-5:2-5:0 ea.) (G-HA)
Intensive reading of the works of a major philosopher, as announced each semester in the Class Schedule.

501R. Graduate Seminar. (2-5:2-5:0 ea.)
Intensive analysis of a selected topic, figure, or movement in philosophy, as announced each semester in the Class Schedule.

531R. Directed Readings in Philosophy. (1-4:1-4:0 ea.)

Physical Education

Professors: Allsen, Bangerter, Call, Fisher, Hartvigsen, Holbrook, Jacobson (Chairman—Women, 296 RB), Jarman, C. Jensen, Roundy (Chairman—Men, 270 SFH).
Associate Professors: Barker, Cryer, Francis, Hirst, M. Jensen, Jones, McGown, Rasmus, Robison, Valentine, Watts. Wallace.
Assistant Professors: S. Allen, Bestor, Black, Chamberlain, Conlee, Edwards, Harrison, Hawkes, Leishman, Lewis, Lyman, Michaelis, Millet, Moe, Tucker, Vickers, Witbeck.
Instructors: D. Allen, Bunker, Davis, Durrant, Felt, Fiat, Frederick, Helm, Hyatt, Kimball, Kragthorpe, Olsen, Painter, Powers, Ramage, Roberson, Silvester, Whitingham.

The Physical Education Departments work together in providing (a) a large variety of interesting activity courses for the total student body, (b) professional education for prospective teachers and coaches on both the undergraduate and graduate levels, and (c) special opportunities in competitive sports, intramurals, dance performance, and prephysical therapy.

1. **University Requirement.** Each student is required to complete PE 177 and two other physical education classes numbered 100-199. PE 177 must be taken during one of the first two semesters of enrollment at BYU.
2. **Undergraduate Professional Preparation.** These programs complete requirements for the B.A. or B.S. degree and secondary and elementary teacher certification (see relevant information following).
3. **Graduate Professional Preparation.** The following graduate programs are offered: M.A., M.S., Ed.D., and Ph.D. Consult the Graduate Program section which follows for additional information.

Undergraduate Program

The undergraduate curriculum is organized into the following tracks: (1) athletic training, (2) coaching, (3) dance, (4) general, (5) scientific, (6) prephysical therapy, (7) preoccupational therapy, (8) special education, (9) teacher certification for secondary and elementary schools.

These tracks provide students with a great deal of flexibility for professional preparation. Students should seek consultation with an adviser to design their educational programs. Program requirement sheets, including recommended general education courses, are available at the Physical Education Advisement Center (205 Richards Building). In addition to the requirements specified for each track, all majors must qualify in the following:

1. 1½ Mile Run
   All majors are required to qualify in the "good" or "excellent" category of the one-and-a-half-mile run. This test must be passed during the last semester.
2. Body Composition
   All majors are required to maintain the following body composition as measured by the skin-fold caliper test:
   Women: less than 20 percent body fat
   Men: less than 15 percent body fat
3. D and E Grades
   A student cannot qualify for graduation with any D or E credit in his or her major.

Athletic Training

A student must (1) complete requirements for teacher certification and (2) complete academic requirements as listed for athletic training and successfully pass the examination administered by the NATA to be certified as an athletic trainer.

Coaching

A minor is available for men and women. A physical education major with coaching emphasis is available for women.

Dance

There are three options available for the student majoring in dance. One option, the dance specialization major, provides a background in all forms of dance with an emphasis in modern dance. This background prepares a student for certification to teach dance in the public schools.

A second option is a dance-sports composite major. The students must complete a core program of lecture classes in addition to specialization in both dance and sports, qualifying them to receive certification to teach both sports and dance in public schools.

A professional dance major is also offered. This course of study does not grant certification but is designed for the student who wishes to perform professionally in modern, ballet, folk, or social dance or to teach in a private studio. This major is flexible enough to allow concentrated effort in a specific area.

General

This program is designed for the student who wishes to secure a liberal education with an emphasis in physical education.

Scientific

This program provides the student with a strong foundation for graduate work.

Prephysical Therapy

Upon completion of the four-year preprofessional program for physical therapy, the student graduates with a B.S. degree in physical education (prephysical therapy emphasis). The student is then eligible to enter an approved school offering certificate or master's degree programs. The length of physical therapy programs is approximately 14 months for a certificate and two years for a master's degree.

A student transferring into prephysical therapy must have a cumulative GPA of 3.0 or better. Students who are to remain competitive for acceptance into physical therapy school should realistically maintain a 3.5 or better GPA.

Upon completion of the two-year preprofessional program for physical therapy, a student is eligible to enter one of a number of approved schools offering a bachelor's degree in physical therapy. The length of the course is two years plus clinical affiliations.

Preoccupational Therapy

Refer to the Preprofessional Programs section of this catalog.

Special Education

A composite major will take 38 hours in a core program, from 10 to 11 hours in physical education skill and sports fundamental courses, and from 15 to 17 hours in a specialty in special education. The student will also complete all of the courses for secondary education certification.

Teacher Certification

Secondary. Students who desire to prepare themselves for employment in secondary schools have three options available: (1) dance specialization, (2) dance and sports composite, (3) sports emphasis. Information relative to these major offerings and to available minors is listed in the Department of Education section of this catalog.

Each student will be responsible for meeting all course requirements for the major and all requirements for secondary certifications. In addition to the courses, each student is required to meet the following skill requirements:

1. Skill Tests
   All majors will be required to pass a skills test in ten of the following activities. It is recommended that this requirement be met prior to student teaching.

   Archery
   Badminton
   Baseball
   Basketball
   Bowling
   Fencing
   Field hockey
   Football
   Golf
   Gymnastics
   Skiing
   Soccer
   Softball
   Swimming
   Tennis
   Track and field
   Volleyball
   Wrestling

   Dance. Any three: ballet, ballroom, folk, modern, and precision.

   Membership on an intercollegiate or extramural team will be accepted as demonstration of skill in that activity. Rugby team members can substitute this activity for football. Water polo, swimming or diving team membership will fulfill the swimming requirement.
2. Exemption Tests
   It is possible to have the requirement for the sports fundamental classes waived by passing a special ex-

amination of skills and techniques. A special fee will be charged.

Elementary. A composite major of elementary education and physical education is available for students who wish to specialize in physical education at the elementary school level. The student must complete the standard elementary education teaching certificate and a 23-credit physical education requirement. The student should obtain a cycle sheet listing sequence of courses from the Physical Education Advisement Center (205 Richards Building).

The academic support area requiring 10 credit hours in physical education is available for elementary education majors. Refer to the Department of Elementary Education section of this catalog for course listings.

Undergraduate Minor Programs

Minor programs are available in each of the following areas. Refer to the Department of Education section of the catalog for course listings.

1. Dance specialty—secondary certification
2. Sports—secondary certification
3. Coaching—secondary certification
4. Academic specialty—elementary certification

Graduate Program

Programs. Master of Arts (M.A.), Master of Science (M.S.), Doctor of Education (Ed.D.), Doctor of Philosophy (Ph.D.).

Entrance Examinations Required. For the doctoral programs, the Miller Analogies Test is required.

Application Consideration Dates. Same as Graduate School deadlines.

Entry Times. Any regular registration.

Master of Arts

Prerequisites. A bachelor's degree with a major in physical education involving knowledge and competencies equivalent to those required in the undergraduate major program at Brigham Young University. Competency examinations in skill, fitness, and knowledge will be administered to entering graduate students. Students will be counseled to strengthen any areas of weakness identified in the examinations.

Fields. Dance, professional leadership.

Minors Permissible. Any approved minor.

Requirements

1. With no project, 36 semester hours.
2. With a project, 24 semester hours plus project (6 semester hours).

Required Courses

1. With no project, 13 hours as follows: PE 691, PE 692; one of the following: PE 662, 661, or 640; three of the following: PE 547, 642, 645, 647, or 648; one of the following: PE 601, 610, or 670.
2. With a project, PE 691, PE 692.

Master of Science

Prerequisites. A bachelor's degree with a major in physical education involving knowledge and competencies equivalent to those required in the undergraduate major program at Brigham Young University.

Fields. Analysis of human motions, professional leadership.

Minors Permissible. Any approved minor.

Requirements. Minimum of 24 semester hours plus thesis (6-hr. min.—699R).

Required Courses. PE 635, 691, 692.

Doctor of Education

Prerequisites. Two years of successful professional experience.

Fields. Analysis of human motions, professional leadership, physical education at the elementary school level.

Minors Permissible. Any approved minor.

Requirements. Minimum of 70 semester hours beyond the bachelor's degree plus a dissertation (12-hr. min.—799R).

Required Courses

1. All courses in one of the three following cores: scientific core (21 semester hours): PE 547, 631, 642, 645, 646, 647, 648, 649, 691, 692; professional leadership core (21 semester hours): PE 610, 640, 661, 662, 663, 670, 671, 672, 691, 692; elementary core (21 semester hours): PE 547, 572, 642, 647, 648, 673, 674, 691, 692, 797R.
2. Supporting field (20 semester hours).
3. Electives chosen from graduate courses in physical education or related areas.
4. All candidates must demonstrate competency in statistics of at least the level demanded by PE 635.

Doctor of Philosophy

Fields. Exercise physiology, corrective physical education, and rehabilitation.

Minors Permissible. Approved minors related to field of emphasis.

Requirements. Minimum of 60 semester hours beyond the bachelor degree plus tool requirement Option III or IV (see Graduate School section of catalog) and a dissertation that involves a minimum of 18 semester credits.

Required Courses

1. Core requirements. Exercise physiology (23 semester hours): PE 631, 635, 642, 645, 646, 647, 648, 649, 650, 691, 692; corrective physical education and rehabilitation (23 semester hours): PE 533, 547, 572, 635, 642, 645, 648, 691, 692, 797R-practicum.
2. Supporting fields (20 semester hours). Exercise physiology: Chem. 481, 484, Zool. 662, 663, plus 10 additional hours in biochemistry and physiology; corrective physical education and rehabilitation: RecEd. 570, Psych. 440, CDFR 514, Zool. 583, 584, plus 6 additional hours in one of these related fields.
3. Electives. Chosen from graduate courses in physical education or related field.

Courses

100R. Intercollegiate Athletics. (½:2:10½ ea.)

101. Cycling. (½:0:2)
Basic knowledge and skills in cycling and bike maintenance.

102. Orienteering. (½:0:2)
Fundamental theory and techniques of sport orienteering.

103. Skill Analysis and Application. (½:0:3)
Instruction and drill in basic skills.

104. Recreational Sports for the Physically Handicapped. (½:0:2)

108R. Precision Dance, Beginning. (½:0:3)

110. Fencing, Beginning. (½:0:2)

111. Fencing, Intermediate. (½:0:0) Prerequisite: PE 110 or equivalent.

113. Wrestling, Beginning. (½:0:2)

114. Wrestling, Intermediate. (½:0:2) Prerequisite: PE 113 or equivalent.

115. Squash, Beginning. (½:0:2)

117. Racquetball, Beginning. (½:0:2)

119. Handball, Beginning. (½:0:2)

121. Track and Field, Beginning. (½:0:2)

123. Badminton, Beginning. (½:0:2)

124. Badminton, Intermediate. (½:0:2) Prerequisite: PE 123 or equivalent.

126. Archery, Beginning. (½:0:2)

128. Bowling, Beginning. (½:0:2) Fee.

130. (PE-AnSci.) Beginning Equitation. (½:0:2) Fee.
Western equitation emphasizing establishment of a balanced seat and proper use of aids. Instruction in handling, grooming, saddling, and supplying the horse.

131. Golf, Beginning. (½:0:2)

132. Golf, Intermediate. (½:0:2) Prerequisite. PE 131 or equivalent.

133. Tennis, Beginning. (½:0:2)

134. Tennis, Intermediate. (½:0:2) Prerequisite: PE 133 or equivalent.

135. Rugby, Beginning. (½:0:2)

140. Basketball, Beginning. (½:0:2)

141. Basketball, Intermediate. (½:0:2) Prerequisite: PE 140 or equivalent.

144. Volleyball, Beginning. (½:0:2)

145. Volleyball, Intermediate. (½:0:2) Prerequisite: PE 144 or equivalent.

147. Soccer, Beginning. (½:0:2)

148. Soccer, Intermediate. (½:0:2) Prerequisite: PE 147 or equivalent.

152. Softball. (½:0:2)

158. International Ballroom Dance, Beginning—Latin and American. (½:0:2)
Bronze level.

159. International Ballroom Dance, Beginning—Modern. (½:0:2)
Bronze level.

160. Swimming, Beginning. (½:0:2)

161. Swimming, Intermediate. (½:0:2) Prerequisite: PE 160 or equivalent.

162. Synchronized Swimming, Beginning. (½:0:2)

163. Synchronized Swimming, Intermediate. (½:0:2) Prerequisite: PE 162 or equivalent

164. Water Polo. (½:0:2)

166. Canoeing. (½:0:2) Prerequisite: pass swimming test.

167. Diving, Beginning. (½:0:0)

168. Diving, Intermediate. (½:0:2) Prerequisite: PE 167 or equivalent.

169R. Swimming for the Handicapped. (½:0:2 ea.)

172. Rhythmic Gymnastics. (½:0:2)

173. Gymnastics, Beginning. (½:0:2)

174. Gymnastics, Intermediate. (½:0:2) Prerequisite: PE 173 or equivalent.

175R. Adaptive Physical Education. (½:0:2 ea.) Prerequisite consent of instructor or referral by McDonald Health Center.

176. Activities for Fitness. (½:0:2)

177. Fitness for Living. (½:1:1) (G-PE) Home Study also.

178. Progressive Weight Training, Beginning. (½:0:2)

179. Jogging. (½:0:2) Home Study also.

180. American Social Dance, Beginning. (½:0:2-3) Home Study also.
Fox-trot, waltz, lindy, cha cha.

181. Folk Dance, Beginning. (½:0:2)

182. Square Dance, Beginning. (½:0:2)

183R. Specialty Dance. (½:0:2-3 ea.)

184. Rhythm and Dance. (½:0:2-3)
For elementary school teachers.

185. Ballet Technique, Beginning. (½:0:2-3)

187. Modern Dance, Beginning. (½:0:2-3)

188. Modern Dance, Intermediate. (½:0:2-3) Prerequisite: PE 187 or equivalent.

189. Latin Social Dance, Beginning. (½:0:2) Home Study also.
Rumba, cha cha, samba, tango.

190. Recreational Dance. (½:0:2)
Instruction in all forms of recreational dance—social, folk, square, round, and currently popular steps.

192. Outing Activities. (½:0:2)
Selected seasonal activities.

194. Skiing—Cross Country. (½:½:1½)

195. Skiing, Beginning. (½:0:2)
Sections formed on basis of ability, with instruction suited to varying skill levels in skiing fundamentals. Student furnishes his ski equipment and pays ski tow fees. Fee. (Permission to withdraw with refund restricted.)

196. Skiing, Intermediate. (½:0.5)

197. Karate, Beginning. (½:0:2)
Stresses fundamental techniques of participation.

198. Judo, Beginning. (½:0:2)
Stresses fundamental techniques of participation.

199. Self-Defense. (½:0:2)
Fundamental principles, skills, and techniques

200R. Competitive Sports. (½:0:3 ea.)

201R. Extramural Sports. (½:0:2)

202. Orientation to Dance Forms. (½:1:1)

205. Rugby, Advanced. (½:0:2) Prerequisite. PE 135.
Offered alternate years.

208R. Precision Dance, Advanced. (½:0:3) Prerequisites: PE 108 and consent of instructor.

217. Racquetball, Advanced. (½:0:2) Prerequisite: PE 117 or equivalent.

219. Handball, Advanced. (½:0:2) Prerequisite PE 119 or equivalent

226R. Archery, Advanced. (½:0:2-3) Prerequisite PE 126 or equivalent.

228R. Bowling, Advanced. (½:0:2) Prerequisite PE 128 or equivalent

231. Sports Fundamentals—Soccer. (½:0:2)

232. Sports Fundamentals—Gymnastics, Tumbling. (1:0:3)

233. Sports Fundamentals—Archery. (½:0:2)

234. Sports Fundamentals—Volleyball. (½:0:2)

235. Sports Fundamentals—Swimming. (1:0:3)

236. Sports Fundamentals—Tennis. (½:0:2) Prerequisite PE 133 or equivalent.

237. Sports Fundamentals—Calisthenics, Games, and Relays. (1:0:3)

238. Sports Fundamentals—Badminton. (½:0:2) Prerequisite PE 123 or equivalent

239. Sports Fundamentals—Weight Training. (½:0:2)

240. Sports Fundamentals—Golf. (½:0:2) Prerequisite PE 131 or equivalent.

241. Basketball: Skills and Teaching Techniques. (½:½:1 ½) Prerequisite: PE 140 or equivalent.

242. Track and Field: Skills and Teaching Techniques. (1:1:3) Prerequisite: PE 121 or equivalent.

243. Gymnastics: Skills and Teaching Techniques. (1:1:3) Prerequisite: PE 173 or equivalent.

245. Volleyball: Skills and Teaching Techniques. (½:½:1½) Prerequisite: PE 144 or equivalent.

246. Softball: Skills and Teaching Techniques. (½:½:1½) Prerequisite: PE 152 or equivalent.

247. Soccer-Speedball: Skills and Teaching Techniques. (½:½:1½)

249. Field Hockey: Skills and Teaching Techniques. (½:½:1½)

250. Ski Instruction Methods. (1:0:4) Prerequisite: PE 296 or equivalent.

Instruction course in skiing for those who wish to qualify as student instructors in the ski program.

258. International Ballroom Dance, Intermediate—Latin and American. (1:0:3) Prerequisite: PE 158 or equivalent.

Silver level.

259. International Ballroom Dance, Intermediate—Modern. (1:0:3) Prerequisite: PE 159 or equivalent.

Silver level.

264. Advanced Life Saving. (1:0:3) Prerequisite: ARC Swimmer level.

265. Water Safety Instruction. (1:0:3) Prerequisites: ARC Swimmer level and lifesaving.

266. Scuba Diving, Beginning. (1:1:2) Prerequisite: PE 160 or equivalent.

268. Diving, Advanced. (1:0:3) Prerequisite: PE 168.

278. Strength Training, Advanced. (½:0:2) Prerequisite: PE 178 or consent of instructor.

Theory and technique of maximal strength development emphasizing "power" and "Olympic" lifts.

279. Folk Dance Teaching Techniques. (1:1:2)

280. Social Dance Teaching Techniques. (1:1:2) Prerequisite: PE 180.

281. Folk Dance, Advanced. (1:0:3) Prerequisite: PE 181 or equivalent.

282. Advanced Square Dance and Calling Techniques. (1:3:0) Prerequisite: PE 182 or equivalent.

283. American Social Dance, Intermediate. (1:0:2-3) Prerequisite: PE 180 or equivalent.

284R. Folk Dance Performance Techniques. (1:0:3 ea.) Prerequisite: PE 181 or equivalent.

International Folk Dance Performance Team.

285. Latin Social Dance, Advanced. (1:0:2-3) Prerequisite: PE 189 or equivalent.

287R. Modern Dance Technique and Theory 1. (1:0:4 ea.)

Emphasizes developing fundamental dance skills and basic theories. For freshman dance majors.

288R. Modern Dance Technique and Theory 2. (2:0:6 ea.) Prerequisite: PE 287 or equivalent experience in modern dance.

290R. Ballet Technique, Intermediate. (1:0:2-3 ea.) Prerequisite: PE 185 or equivalent.

291R. Ballet, Advanced. (1:0:3 ea.) Prerequisite: by audition.

292R. Ballet Performing, Intermediate. (1:0:2-3 ea.) Prerequisite: by audition.

293R. Ballet, Pas de Deux and Pointe Variations. (½:0:2 ea.) Prerequisite: PE 290R or equivalent.

314. Intramural Sports. (2:2:0) Home Study also.

330. Principles of Physical Education. (3:3:0) Home Study also.

Principles, plus relationship to total education.

340. Introduction to Motor Learning. (2:2:1) Prerequisite: Stat. 221 or PE 461.

341. General Kinesiology. (3:3:0) Prerequisites: Zool. 260 and 261 or equivalent.

344. Physiology of Activity. (3:3:0) Prerequisites: Zool. 260, 261.

Applied human anatomy and physiology.

358R. International Ballroom Dance, Advanced—Latin and American. (1:0:3 ea.) Prerequisite: PE 258 or equivalent.

Gold level.

359R. International Ballroom Dance, Advanced—Modern. (1:0:3)

360R. American Social Dance, Advanced. (1:0:0 ea.) Prerequisite: PE 283 or equivalent.

367R. Coaching Team Sports. (2:1:2) Prerequisite: consent of instructor.

Theory, fundamentals, strategy, and techniques of coaching volleyball, field hockey, or softball.

369R. Coaching Individual Sports. (2:2:2 ea.) Prerequisite: consent of instructor.

Theory, fundamentals, strategies, and techniques of coaching tennis or golf or badminton.

370. Wrestling Fundamentals and Coaching (Men). (2:1:2)

For physical education majors only. Theory, fundamentals, and techniques of coaching wrestling, including some emphasis on management of meets and tournaments.

371. Football Fundamentals and Coaching. (2:2:1) Home Study also.

372. Basketball Fundamentals and Coaching. (2:2:1) Home Study also.

373. Track and Field Fundamentals and Coaching. (2:1:2)

374. Baseball Fundamentals and Coaching. (2:2:1)

375. Physical Education for Teachers of Primary Grades. (2:1:3) Prerequisites: PE 103 and 184 or equivalent.

Analysis and development of skills and application of methods in teaching K-3.

376. Physical Education for Teachers of Intermediate Grades. (2:1:3) Prerequisites: PE 103 and 184 or equivalent.

Analysis and development of skills and application of methods in teaching grades 4-6.

378. Physical Education Practicum. (1:1:2) Prerequisites: SecEd. 276, 377, and major approval card for women.

379. Physical Education for Special Education Teachers. (2:2:2) Prerequisites: PE 103, 184.

380. Modern Dance Production. (2:3:0) Prerequisites: PE 287, 288.

381R. Modern Dance Choreography. (1:3:0 ea.)

382. Modern Dance Technique and Theory 3. (2:0:7½) Prerequisite: PE 288 or equivalent experience in modern dance.

383. Rhythm Analysis for Dance. (1:3:0)

Relationship of rhythm to movement, sound, and musical accompaniment.

384R. Folk Dance, Advanced Performance. (1:0:3 ea.) Prerequisites: PE 182 and 284R.

386R. International Ballroom Dance Team. (1:0:3 ea.) Prerequisites: PE 358 and 359 or equivalent.

387. Modern Dance Composition, Intermediate. (1:0:4) Prerequisite: PE 287.

Fundamental composition forms, emphasizing locomotor development and spatial elements.

388. Teaching Methods in Modern Dance. (1:0:4) Prerequisites: PE 187 and 286.
Emphasis on planning, teaching, and evaluating lessons.

389. Modern Dance Improvisation. (1:0:4)

390. Ballet Methodology. (1:2:2) Prerequisite: PE 290 or equivalent.
Classical ballet—from preballet through advanced references, including in-depth analysis of Bournonville, Cecchetti, Vaganova, and RAD syllabi.

406. Sports Officiating (Men). (2:2:1)
Rules, techniques, problems and procedures in officiating football, basketball, and other team and individual sports. Suggested for those who wish to officiate in intramural programs.

407. Sports Officiating (Women). (2:1:3)
Rules, techniques, problems and procedures in officiating softball, volleyball, and basketball. OSA national examination given.

411. Problems of Interscholastic Athletics. (2:2:0)

414. Management of Athletic and Intramural Programs. (3:3:0)
Effective management via experience; investigating problems.

446. Adaptive and Corrective Physical Education. (3:3:0) Prerequisites: PE 341, 344.
Fundamentals of body mechanics and therapeutic exercise, coupled with kinesiological principles for detection and correction of basic neuromusculoskeletal anomalies.

449. Diagnosis and Management of Athletic Injuries. (3:3:1) Prerequisite: PE 446.
For prospective coaches, trainers, health and physical educators, physical therapists, and premedical students for recognition, evaluation, and care of athletic injuries. Techniques in taping, prevention, and rehabilitation of injuries.

461. Tests and Measurements for Women. (3:3:0)
Elementary statistical methods and tests as they apply to the teaching of physical education.

463. Techniques of Coaching and Officiating Competitive Swimming. (1:2:3) Prerequisite: intermediate swimming skills.
Techniques of coaching competitive swimming; analysis of strokes, starts, turns, and legalities of each; officiating skills. (DGWS ratings may be obtained.)

464. Introduction to Tests in Health and Physical Education. (2:2:0) Prerequisite: Stat 221.
History and development of measurement in health and physical education. Description of important tests, emphasizing techniques of test administration and application of results.

472R. Team Sports Fundamentals and Coaching. (2:2:2 ea.) Prerequisites: PE 241 and 245 or equivalent.
Fundamentals, theory, and techniques of coaching basketball and volleyball.

474R. Coaching and Judging Women's Gymnastics. (2:1:2 ea.) Prerequisite: PE 243 or equivalent.
Techniques and the organization procedures for conducting competitive meets.

478. Elementary Student Teaching. (4:1 7) Prerequisite: completion of courses in composite major.

479. Secondary Student Teaching. (8:1.15) Prerequisites: application and approval.

480. Dance Accompaniment. (1:2:1) Prerequisite: PE 383.

481. Children's Dance Methods. (1:2:1) Prerequisites: PE 388, 480.

484R. Folk Dance Performance Company. (1:0.3 ea.)

486. History and Philosophy of Dance. (3:3:0)
Significance of these ideas in view of their effect on modern educational and cultural uses of dance.

490. Seminar in Dance. (2:1:2)

533. Physical Education for the Mentally Retarded. (2:2:0) Prerequisite: bachelor's degree in physical education.

547. Advanced Corrective Physical Education. (2:2:1) Prerequisite: PE 446.
Techniques of postural evaluation, muscle testing, therapeutic exercises, and relaxation; extent and limitations of the physical educator's responsibility for recognition of divergent conditions and referral procedures.

549. Advanced Athletic Training. (3:2:2) Prerequisite: PE 449.

550R. Athletic Training Practicum. (1-6:0:75 ea.) Prerequisites: PE 449, 549.

570. Teaching Progression in Individual Sports. (2:1:2)
Materials, methods, and teaching progression in archery, badminton, bowling, tennis, or golf.

571. Teaching Progression in Team Sports. (2:0:0)

572. Motor Development and Growth of Children. (2:2:3)
Existing body of knowledge regarding motor development of children and significance of physical activity in early childhood.

575. Materials and Methods for Secondary Teachers. (2:1:2)

576R. Workshop in Fitness and Sport. (1-4:Arr..Arr. ea.) Prerequisite: undergraduate major in physical education or equivalent.
For physical education teachers Upgrading skill, knowledge, and competence

580R. Workshop in Ballroom, Folk, and Social Dance. (1:0:3-9 ea.)

587R. Modern Dance Competition, Advanced. (1:0:4 ea.)
Advanced principles of composition, including elements of space, motion, energy, and time.

588R. Modern Dance Performing Techniques. (2:0:0 ea.) Prerequisites: PE 382, 385.
Advanced techniques, with combinations of movement and pattern to further dance as a performing art.

589R. Workshop in Modern Dance. (1-2:Arr.:0 ea.)

599R. Prephysical Therapy Practicum. (1-6:0:2-20 ea.) Prerequisite: PE 446.
Field experience for physical and recreation therapy students. Fifty hours of volunteer service in an approved institution of rehabilitation during junior and senior years required before credit given.

601. Problems in Physical Education. (2:2:0)
Identification and interpretation of the nine generalized problems.

610. Philosophy of Physical Education. (2:2:0) Prerequisite: PE 330
Interpretations, beliefs, and concepts underlying the profession.

631. Problems in Athletic Conditioning. (2:2:0) Prerequisite: PE 344.
Applying scientific principles to problems in athletic conditioning

635. Research Design in Physical Education. (2:2.1) Prerequisite: PE 464 or equivalent

640. Curriculum Construction in Physical Education. (2:2:0)
Curriculum problems for elementary, secondary, and college physical education programs.

642. Mechanical Analysis of Activities. (2:2:0) Prerequisite. PE 341

Analysis of the mechanics of movement to develop the highest degree of skill.

645. Functional Anatomy and Kinesiology. (4:3:2) Prerequisites: PE 341, 344 and 446, or equivalents.

646. Laboratory Methods and Procedures. (2:1:2) Prerequisites: PE 344 and 647.
Basic techniques and procedures used in human performance laboratories.

647. Advanced Physiology of Activity. (2:2:0) Prerequisites: PE 341, 344.
Adjustments made by the body to physiological stress.

648. Theory of Motor Learning. (2:2:0) Prerequisite: PE 340.
Theories and methods of learning physical skills.

649. Exercise, Testing, and Prescription in Coronary Heart Disease. (2:1:2) Prerequisites: PE 646 and 647.
In-depth study of coronary heart disease, the risk factors, symptoms, and interventions, and the role of exercise in testing, prescription, and rehabilitation.

650. Exercise Physiology of Skeletal Muscle. (2:2:0) Prerequisite: PE 647.
Physiological, anatomical, morphological, and biochemical adoptions of skeletal muscle to exercise and training.

661. Supervision in Physical Education. (2:0:0)
Theory and practice of successful supervision in PE

662. Administration and Public Relations. (3:3:0)
Problems at all school levels: local, state, and national.

663. Planning Facilities. (2:2:0)
Planning facilities for school and community physical education and recreation programs.

670. History of Physical Education. (3:3:0) Prerequisite: PE 330.
From ancient civilization to the present day.

671. Psycho-Sociological Implication of Sport. (2:2:0) Prerequisites: graduate standing; Psych. 111 and 450 or equivalent.
Related to the participant and the spectator.

673. Physical Education in the Elementary School. (1-3:3:0)
Curricular interrelationships and content materials in obtaining educational results. For teachers, administrators, and supervisors.

674R. Workshop in Physical Education in the Elementary Schools. (1:1:1)
Materials, methods, and teaching progression in physical education for the elementary school. Offered on demand.

675. Sport and Society. (2:2:0) Prerequisite: PE 330 and 413.
Analysis of the relationship of sport to other elements of societies, emphasizing the 20th century.

691. Seminar. (1:1:0) Prerequisite: acceptance into graduate program.
Evaluation of the student's aptitudes, leadership qualities, and ability to successfully complete an Ed.D. program in physical education.

692. Research Methods in Physical Education. (2:3:0) Prerequisite: PE 464.

694. Individual Study. (2:1:1)

696. Seminar in Problems. (1:1:0)

698. Field Project—Master's Degree. (1-6:0:Arr.)

699R. Master's Thesis. (6-9:Arr.:Arr. ea.)

797R. Individual Research in Physical Education. (2-9:Arr.:Arr. ea.) Prerequisites: undergraduate major in physical education; matriculation for graduate study in the department.

799R. Doctoral Dissertation. (6-9:Arr.:Arr. ea.)

Physical Science

Coordinator: J. Merrill (271 ESC).

Course

100. Fundamentals in Physical Science. (3:3:0)

Physics and Astronomy

Professors: Ballif, Barnett, Bass, Decker, Dibble, Dixon, Dudley, Eastmond, Fletcher, A. L. Gardner, J. H. Gardner, Hales, Hansen, Harrison (Chairman, 296 ESC), M. Hill, Jones, Larson, McNamara, Merrill, Nelson, Palmer, Strong, Vanfleet.
Associate Professors. Christensen, Evenson, Hatch, Jensen, Knight, Mason, Miller, Rasband, Woodford.
Assistant Professors: Geertsen, Nielsen.

The Department of Physics and Astronomy, through both its undergraduate and graduate programs, provides an opportunity for inquiring into the nature of the physical world and the laws which govern our universe. Training and perspective for students with a wide range of career objectives, including scientific research, teaching, engineering, business, law, health, and other fields outside science, are provided.

Undergraduates as well as graduates experience the enthusiasm and excitement of scientific inquiry by active participation in research programs of the department.

Undergraduate Program

Through its undergraduate offerings, the Department of Physics and Astronomy seeks to help students of all disciplines to become more fully aware of our physical environment, to recognize the action of universal laws in that environment, to realize that man is capable of comprehending these laws, and to appreciate the limitations as well as the strengths of science.

The curriculum of the Department of Physics and Astronomy is designed to provide (1) a perspective on science and an introduction to the role of physics in the human quest for understanding; (2) training for students who intend to pursue graduate work in physics or astronomy; (3) preparation for students who intend to enter industrial or governmental service as physicists or astronomers; (4) undergraduate training for students who will pursue graduate work in business (e.g., MBA) and law; (5) a fundamental background for other physical sciences and engineering; (6) the physics fundamentals required by the biological science, premedical, predental, and nursing programs; and (7) training in the subject matter of physics for prospective teachers of the physical sciences.

A limited number of scholarships, including the John Einar Anderson scholarships, are available to qualified physics majors.

Sequence for Science, Professional, and Technical Students. Students who expect to major in physics, other physical sciences, or engineering should begin their study of physics with Physics 121. Those who expect to study medicine or dentistry, or to major in the biological sciences may elect Physics 201 and 202. Students who desire an elementary course in applied physics should take Physics 105, 106, 107, and 108.

Courses for Nonscience Students. Nonscience students may profit from Physics 100, 110, or 300, which emphasize the known fundamental principles of our physical environment and also the role of physics as one of the humanities as well as a science; or Physics 127, 129, 130, 137, 167, or 177, which are organized with the object of giving students an understanding of more specialized areas of their physical environment, while at the same time bringing them into contact with the foundations of physics.

Information regarding general education evaluations may be found in the general education programs sections of this catalog. The basic physical science course, the courses mentioned above, and other physics and astronomy courses will aid the student in preparation for particular evaluations in natural sciences.

Prospective Teachers. Students expecting to use physics as a teaching major or minor or as part of a composite teaching major should refer to the Secondary Education section of this catalog. They are also invited to consider the MA-3 program beginning in the junior year, which is described below.

Majors in Physics

The Department of Physics and Astronomy offers undergraduate programs leading to the degrees of Bachelor of Science (B.S.) and Bachelor of Arts (B.A.). The B.S. degree is designed for those preparing for graduate work or employment in the sciences and engineering, but is also an excellent background degree for business administration, medicine, law, or other nonscience fields. The B.A. degree is a liberal arts degree and is suitable for those planning teaching careers; it may also serve as background for the professions listed under the B.S. degree.

High School Preparation

It is desirable for students planning to major in physics to include in their high school preparation all of the physics, mathematics, and chemistry courses that are available, and they should become proficient in English expression, writing, and composition.

Requirements for the B.S. Degree

For students to graduate with the Bachelor of Science degree, they must successfully complete (C- grade or better) the following courses: Physics 121, 122, 214, 221, 222, 280, 317, 318, 321, 322, 341, 342, 380; Math. 112, 113, 214 (or 141, 142, 344), and 434; and 6 or more credit hours selected from the 300-, 400-, or 500-series physics courses. Chem. 111 or 105 is strongly recommended for all physics majors. In special cases, Physics 317 and 318 may be replaced by mathematics courses approved by the chairman.

Requirements for the B.A. Degree

For the Bachelor of Arts degree, the student must successfully complete these courses: Physics 121, 122, 214, 221, 222, 280, 300, 317, 321, 322 (341 and 380 may be substituted for 322); Math. 112, 113, 214, 434 (or other equivalents); and an approved 14-hour field of concentration outside the department in addition to the previously listed requirements. No more than 4 hours of D grade (D-, D, D+) will be allowed toward filling the major requirement. Approval for the 14-hour field of concentration should normally be obtained from the Physics and Astronomy Department chairman by the beginning of the junior year.

Physics-Astronomy Option

Physics majors whose primary interest is astronomy or astrophysics must take the courses listed under the requirements for a physics major. It is recommended that these students take Physics 129 and 130 during the freshman year. They should also include Physics 527, 528 as part of their program in the senior year.

Applied Physics

Professional opportunities for physicists often occur in areas of applied physics, relating, for example, to energy problems in nuclear, solar, or geothermal power or to medical, biological, optical, or acoustical problems. It is recommended that students interested in any area of applied physics plan a detailed program with an adviser in the Department of Physics and Astronomy as early as possible in their University career. Physics majors whose interest is nuclear engineering physics should consider the B.S. degree in the following applied physics/nuclear power option.

Requirements for the B.S. Degree in Applied Physics

For the Bachelor of Science degree in applied physics, the student must successfully complete (C- grade or better) the following courses: Physics 121, 122, 214, 221, 222, 280, 317, (318), 321, 341, 342, (380), and 10 hours of approved electives; Math. 112, 113, 214, (434). Substitutions may be made for the courses listed in parentheses with the approval of the Physics and Astronomy Department chairman. Approval for the electives is obtained through the department chairman. Copies of possible programs for several applied physics options are on file in the office of the Department of Physics and Astronomy.

Suggested Courses for Physics Majors

Language. Students are strongly urged to achieve competence in a foreign language (German, Russian, or French) during their undergraduate career, especially if they intend to go to graduate school. A summer program in French, German, or Russian would be highly advantageous.

Mathematics. Students in physics should take mathematics beginning the first semester of the freshman year. The initial course is determined by the results of the mathematics placement examination, administered by the Department of Mathematics, which should be taken prior to registration. Physics majors who are especially well prepared in mathematics should begin with Math. 141; those with average preparation (sufficient to begin calculus) should begin with Math. 112; those whose preparation is inadequate, as indicated by the placement exam, will need to begin with some modules of Math. 110. In the latter case students might wish to enter the University during the Summer Term and bring their mathematics preparation to the point where they can take Math. 112 or 141 concurrently with Physics 121 during the Fall Semester.

Course Planning

Suggested B.S. Programs. Considerable flexibility is available to students planning a program for the degrees in physics.

A suggested sequence of courses which would provide the B.S. student with excellent preparation for graduate school follows. Detailed programs for other options are available from the Department of Physics and Astronomy. Those who plan to take the Graduate Record Examination for admission to the Ph.D. program at BYU or to a graduate school elsewhere should be sure to include Physics 551 and 552 in their programs even though these courses are not required for the B.S. degree. Physics and mathematics courses required for graduation appear in bold face. Students interested in the physics-astronomy options should note the preceding Physics-Astronomy Option section.

First Year	**F**	**W**
Physics **121, 122**	3	3
Math. **112 (or 141), 113 (or 142)**	4	4
Chem. 111, 112	3	3
Chem. 113		3

Second Year	**F**	**W**
Physics **221, 222**	3	3
Physics **214, 280**	1	3
Physics **317**		3
ComSci. 131	3	
Math. **214 (or 344)**	3	

Third Year	**F**	**W**
Physics **318, 380**	3	3
Physics **321, 322**	4	4
Physics **341**		3
Math. **434**	3	

Fourth Year	**F**	**W**
Physics **342**	3	
Physics 381	3	
Physics 431, 471	3	3
Physics 551, 552	3	3
Physics 591R	1	1
RelC. 491R	1	1

The B.S. degree can be completed in three years if the student attends Spring Term each year and Summer Term one of the years. A sample program appears below.

First Year	F	W	Sp	Su
Chem. 111, 112	3	3		
Chem. 113		3		
Math. **112, 113, 214**	4	4	3	
Physics **121, 122**	3	3		

Second Year	F	W	Sp
Math. **434**			3
Physics **221, 222**	3	3	
Physics **214, 280**	1	3	
Physics **317, 318**		3	3

Third Year	F	W	Sp
Physics **321, 322**	4	4	
Physics **341, 342**		3	3
Physics **380, 381**		3	3
Physics 431, 471	3	3	
Physics 591R	1	1	
RelC. 491R	1	1	

Four-Year Master's Degree Program. After completing a three-year B.S. program, students may work toward an M.S. or M.A. degree in the fourth year. Physics 551 and 552 should be taken in the fourth year by all students who are doing or expect to do graduate work in physics. Students not working part-time may achieve the M.S. in one calendar year, finishing courses in the two-semester academic year and expecting to spend a full summer on the thesis. Students who work part-time (e.g., as teaching assistants) should usually expect to take an extra semester to finish the M.S. degree.

B.S. Degree in Applied Physics/Nuclear Power Option. A B.S. degree in applied physics is offered for those whose interest is nuclear engineering physics. A possible sequence is outlined below.

Nuclear Power Option

Freshman Year	**Hours**
Physics 121, 122	6
Math. 112, 113	8
Chem. 111, 112, 113	8

Sophomore Year	**Hours**
Physics 221, 222, 214, 280, 317	13
Math. 214	3
Econ. 110	3
ComSci. 131	2

Junior Year	**Hours**
Physics 321, 318, 341, 380	13
MechEng. 321, 322, 412, 540	13
ElecEng. 301, 302, 303	5

Senior Year	**Hours**
Physics 551, 552, 555, 557, 497R	12
ChemEng. 378, 582, 583	8
ElecEng. 531	3
CivEng. 471	3
RelC. 491R	2

Integrated Master's Program for Physicists and Engineers

Students who desire to obtain an engineering degree with a strong physics and mathematics emphasis should consider the Integrated Master's Program. This program integrates the work of the junior, senior, and graduate years into a sequence which culminates in a B.S. degree in physics and a master's degree in one of the engineering departments.

Alternatively, students interested in physics and engineering may consider obtaining a B.S. in engineering with emphasis in physics. Much of the course work required for the B.S. in engineering may be required prior to initiating master's work in an engineering department.

To enter the Integrated Master's Program, students, immediately upon completion of their second year (four semesters) and no later than the third year (six semesters), should consult both the Physics and Astronomy Department and the appropriate engineering department. A detailed sequence of courses satisfying graduation requirements for both degrees must be approved by the chairman of each department and deans of both colleges. In this manner, students can personally design an approved program to meet their personal needs and objectives. The program is flexible to allow for possible changes the student may desire to make as the program is being carried out. Both degrees may be completed and awarded simultaneously.

Physics Minor

The standard program for the physics minor is Physics 121, 122, 214, 221, 222, and 280.

Graduate Program

The graduate programs of the Department of Physics and Astronomy are designed to educate and train students to the highest standards of excellence so that they may assume leadership positions whether they be employed in government, industry, education, or elsewhere. To this end the department offers the following:

Programs: Master of Arts (M.A.), Master of Science (M.S.), and Doctor of Philosophy (Ph.D.)

Prerequisites: Applicants for a master's degree program should have completed upper-division courses in differential equations, mechanics, and electricity and magnetism. Applicants for a Ph.D. program should also have completed senior-level courses in modern physics and thermal physics. Additional courses in optics or other areas are recommended. Any deficiencies in formal course work at the undergraduate level will be considered at registration time, and an appropriate program for removing these deficiencies will be developed by students and their sponsors or advisers.

Special Examinations Required. Graduate Record Examination scores (both aptitude and advanced physics) are required of all applicants for admission.

Financial Aid. As a rule, qualified graduate students receive some kind of financial aid which may take the form of one or more of the following: teaching assistantships, scholarships (including the John Einar Anderson scholarship), internships (University-sponsored fellowships), or tuition waivers. The exact amount of financial aid given depends on individual merit.

Application Consideration Dates. Same as Graduate School deadlines. Applications should be submitted early (April 1 for fall registration) for prime consideration relative to scholarships or teaching assistantships.

Entry Times. Any regular registration.

Master of Arts

Field. Physics teaching.

Minors Permissible. Option 1 with a minor in education, or Option 2.

Required Courses. This program differs from the M.S. program in its prerequisites. Physics 591R (graduate seminar) is required of all graduate students every semester in residence.

M.A.-3 Program. One mode of completing the M.A. degree is an M.A.-3 program for secondary and junior college teachers. This must begin in the junior year and leads to both B.A. and M.A. degrees in physics as well as teacher certification. Prerequisites to this three-year program are Math. 111, 112, and the general education requirements for other than physical sciences and mathematics. A typical M.A.-3 program follows:

Junior Year: Chem. 105; SecEd. 276; Math. 113, 214, 301, 302, 371, 434; Physics 214, 317.

Senior Year: Health 362; Physics 222, 280, 300, 318, 321; SecEd. 376R, 476.

Graduate Year: Physics 341, 380, 551, 552, another two-semester physics series, 699R.

Suggested Minors: Math. 387, 501, 502; or EdAd. 640, 644R, 762.

Master of Science

Fields. Acoustics, astrophysics, atomic physics and spectroscopy, biophysics, nuclear physics, planetary and space physics, plasma physics, solid-state physics, theoretical physics.

Minors Permissible. Option 1 with a minor in mathematical physics is recommended. The requirements can be satisfied with Physics 517, 518, 621. Option 2 is also permissible.

Required Courses. Physics 591R (graduate seminar) is required of all graduate students every semester in residence.

The Master of Science degree often is sought by those who intend to continue on for the Ph.D. degree, but it also serves as a terminal degree for many who intend to work in industrial or governmental research or teaching. Those intending to enter research can maintain breadth or obtain some degree of specialization by selecting appropriate graduate or undergraduate courses, where this can be done in conformity with the regulations of the Graduate School.

Doctor of Philosophy

Degrees. Two degrees are offered: (1) physics and (2) physics and astronomy.

Prerequisites. To satisfy the language-tool requirement, students may select any of the four options (1,2,3, or 4) as follows:

Options 1 and 2: These options can be selected only upon the recommendation of the student's advisory committee; only Russian, French, and German languages are applicable.

Option 3: Students must demonstrate competency in reading Russian, French, or German and also—

a. demonstrate competency in the use of computers as they relate to scientific computations comparable to the completion of a 3-hour computer science course and

b. complete satisfactorily 3 semester hours of course work, approved by their advisory committee and selected from:
   1. upper-division or graduate mathematics courses (except differential equations, Math. 434).
   2. statistics or computer science courses with emphasis on the use of statistics and computers in the physical sciences.
   3. Physics 617, 618 (mathematical physics).

Option 4: Students must—

a. demonstrate competency in computer science as outlined in Option 3.

b. complete satisfactorily 9 semester hours of course work, approved by their advisory committee and selected from the list in Part b of Option 3.

Fields. Acoustics, astrophysics, atomic physics and spectroscopy, nuclear physics, planetary and space physics, plasma physics, solid-state physics, theoretical physics.

Minors Permissible. See Required Courses following

Requirements

1. Minimum of 48 hours in approved formal course work exclusive of graduate seminars (see Physics 591R), plus dissertation (18-hr. min.—799R).

2. Successful completion of comprehensive written examinations covering the required courses listed below and an oral examination covering the student's general knowledge of physics and its techniques. Generally these examinations are to be taken at the end of the second year.

3. Before admission to candidacy, tentative acceptance as a research student by a member of the faculty of the Department of Physics and Astronomy.

Required Courses. Physics degree: 517, 518, 621, 641, 642, 651, 652; physics and astronomy degree: 517, 518, 527, 528, 621, 651, 652. A graduate seminar each semester of residence. At least 12 credit hours in that field listed below which is most closely related to the field of the student's research to constitute a major and 12 credit hours in a second field to constitute a minor.

No duplication between these courses and those listed above is permitted.

1. Acoustics: Physics 561, 562, 565R, 566R, 623, 631, 681.
2. Astrophysics: Physics 527, 528, 529, 611, 612, 627, 628, 671, 711R.
3. Atomic physics and spectroscopy: Physics 527, 528, 631, 632, 671, 672, 711R.
4. Nuclear physics: Physics 555, 581, 631, 655, 656, 751, 752, 711R.
5. Plasma physics: Physics 536, 537, 623, 631, 632, 645, 646, 711R.
6. Solid-state physics: Physics 581, 623, 631, 681, 682, 711R.
7. Theoretical physics: Physics 617, 618, 625, 626, 632, 711R, 751, 752.
8. Planetary and space physics: Physics 536, 537, 631, 645, 646, 671, 672, 711R.
9. Physics group for physics and astronomy degree only: Physics 536, 537, 625, 626, 645, 646, 655, 656, 711R (6 hrs.): 631, 632, 641, 642 (6 hrs.).

Students whose research is in acoustics may, with the approval of their committee, construct a 12-hour major or minor which includes courses outside the department.

Courses

100. Fundamentals of Physics. (3:3:0) Home Study also. (G-PS)

Principles of classical and modern physics as they relate to current concepts of our physical environment.

105. Introductory Applied Physics. (3:4:0) (G-PS, ML) Prerequisites: completion of or concurrent registration in Math. 105 or 110 and 121 or equivalent. Recommended: concurrent registration in Physics 107.

An applied physics course not requiring calculus. Topics include mechanics, heat, wave motion, sound.

106. Introductory Applied Physics. (3:4:0) (G-PS) Prerequisite: Physics 105 or equivalent. Recommended: concurrent registration in Physics 108.

Continuation of Physics 105. Topics include electricity and magnetism, atomic and solid state physics, and optics.

107. Introductory Applied Physics Laboratory. (1:0:3) (G-PS) Prerequisite: completion of or concurrent registration in Physics 105.

108. Introductory Applied Physics Laboratory. (1:0:3) (G-PS) Prerequisite: completion of or concurrent registration in Physics 106.

110. Development of Scientific Thought. (3:3:0) (G-PS, ML)

Historical development of some important ideas of physics, emphasizing the inductive method of arriving at scientific concepts and the relationship of these concepts to other areas of thought.

121, 122. Principles of Physics. (3:4:0 ea.) (G-PS) Prerequisites: completion of or concurrent registration in Math. 112 or 141.

Mechanics (first semester); electricity and magnetism (second semester). (See 221 for waves, optics, thermal physics.) For science and engineering students.

127. Descriptive Astronomy. (3:3:0) Home Study also. (G-PS)

Nonmathematical presentation of our knowledge of the content and history of the cosmos, frequently using observatory and planetarium. Students taking this course may not receive credit for Physics 129 or 130. Physics 128 is **not** a laboratory course for Physics 127.

128. Elementary Astronomy Laboratory. (1:0:2) (G-PS) Prerequisite: Physics 127 or 129.

Laboratory course providing firsthand experience in observing and analyzing astronomical phenomena.

129, 130. Introduction to Astronomy. (2:2:0 ea.) (G-PS) Prerequisite: high school algebra and trigonometry.

For students primarily interested in the sciences. Students taking this course may not receive credit for Physics 127.

137. Environmental Physics. (3:3:0) Home Study also. (G-PS)

Nonmathematical introduction to earth's physical environment and effects of energy use. The sun, weather, atmospheric modification, electrical power generation, thermal and radioactive pollution.

167. Descriptive Acoustics of Music and Speech. (3:3:0) (G-PS)

Introductory acoustics course, emphasizing physical principles underlying the production and perception of music and speech.

177. Physics of Light and Photography. (3:2:3) Home Study also. (G-PS)

Introductory course emphasizing scientific principles related to photography. Lab included.

201, 202. General Physics. (5:5:3 ea.) (G-PS) Prerequisite: Math. 119 or equivalent.

For students in premedical, predental, and biological science programs. Mechanics, heat, sound, light, electricity and magnetism, atomic and nuclear physics. Lab included.

214. Principles of Physics Laboratory. (1:0:3) (G-PS) Prerequisite: completion of or concurrent registration in Physics 221.

221, 222, Principles of Physics. (3:4:0 ea.) (G-PS) Prerequisite: Physics 122.

Continuation of Physics 121, 122. Thermal physics, waves, optics (first semester); special relativity, quantum effects, atomic and nuclear physics (second semester).

280. Experimental Physics 1. (3:1:6) (G-PS) Prerequisite: completion of or concurrent registration in Physics 222.

300. History and Philosophy of Physics. (3:3:0) (G-PS) Prerequisite: Physics 221 or equivalent.

Origin, content, and philosophical significance of basic concepts in physics.

317, 318. Elementary Methods in Theoretical Physics. (3:3:0 ea.) (G-PS)

Formal procedures in theoretical physics; applications of linear algebra, vector analysis, complex analysis, Fourier techniques, etc., to the classical equations of physics.

321, 322. Mechanics. (4:4:0 ea.) (G-PS) Prerequisite: Physics 317.

Newton's laws applied to particles and systems of particles, including rigid bodies. Conservation principles, Lagrange's equations, Hamilton's equations, and special relativity.

341, 342. Electricity and Magnetism. (3:3:0 ea.) (G-PS) Prerequisite. Physics 317.

Classical theory of electricity and magnetism developed from its experimental foundations. Electrostatics, magnetostatics, currents and their associated fields, circuit theory, and Maxwell's equations.

380. Experimental Physics 2. (3:1:6) Prerequisite: Physics 280 or equivalent.

Techniques in electrical, optical, thermal, electronics, etc., measurements and instrumentation.

381. Advanced Experimental Physics. (3:1:6) Prerequisite: Physics 380 or equivalent.

Application of contemporary methods and instruments to the experimental observation and measurement of physical phenomena.

391, 392. Seminar in Current Physics. (1:1:0 ea.) (G-PS) Prerequisite: consent of instructor.

431. Thermal Physics. (3:3:0) (G-PS)

Principles of thermodynamics, with introduction to the concepts of kinetic theory and statistical mechanics.

471. Optics and Electromagnetic Theory. (3:3:0)

Physical and quantum electromagnetic wave phenomena, and modern topics such as coherent interference, holography, lasers, radiation, etc.

497R. Introduction to Research. (1-3:0:2-6 ea.)

511. Introduction to Theoretical Physics. (3:3:0) Prerequisite: Math 434 or equivalent.

Basic principles of physics, emphasizing mathematical formulation. Topics vary.

513R. Special Topics in Contemporary Physics. (1-3:1-3:0 ea.) Prerequisite: consent of instructor.

Topics generally related to recent developments in physics. Offered on sufficient demand.

517, 518. Mathematical Physics. (3:3:0 ea.) Prerequisite: Physics 318 or equivalent.

Topics in modern theoretical physics, including applications of matrix and tensor analysis and linear differential and integral operators.

527, 528. Introduction to Astrophysics. (3:3:0 ea.) Prerequisite: consent of instructor.

Principles and observational techniques of astrophysics.

529. Observational Astrophysics. (3:3:0) Prerequisites: Physics 527, 528.

Survey of important areas of current research. Offered on sufficient demand.

536, 537. Space and Planetary Physics. (3:3:0 ea.) Prerequisite: consent of instructor.

Solar physics, interplanetary fields, and atmospheres of earth and planets. Offered on sufficient demand.

551. Elements of Quantum Theory. (3:3:0) Prerequisites: Physics 221 and Math. 434 or equivalent.

Analytical foundations of quantum mechanics; applications from atomic and molecular spectography, quantum statistics, solid state physics, etc.

552. Elements of Nuclear Theory. (3:3:0) Prerequisite: Physics 551 or equivalent.

Nuclear physics considered in a quantum theory context; nuclear scattering, radioactivity, nuclear reactions, nuclear models, elementary particles, etc.

555. Nuclear Reactor Physics. (3:3:0) Prerequisite: ChemEng. 582 or consent of instructor.

Introduction to neutron physics in multiplying and nonmultiplying media; diffusion and slowing down of neutrons; multigroup reactor theory. Offered on sufficient demand.

557. Nuclear Reactor Physics Laboratory. (1:1:2) Prerequisite: Physics 555.

Laboratory experiments in neutron and nuclear reactor physics; reactor operation; cross-section, neutron age, and diffusion parameter measurements. Offered on sufficient demand.

561. Fundamentals of Acoustics. (4:4:0)

Generation, transmission, and reception of sound. Vibrating systems, properties of elastic media, mechanical and electrical energy, and radiation. Offered on sufficient demand.

562. Acoustical Measurements. (2:0:4) Prerequisite: completion of or concurrent registration in Physics 561.

Selected experiments in acoustics. Offered on sufficient demand.

565R. Acoustics of Music and Speech. (3:3:0 ea.) Prerequisite: Physics 561 or consent of instructor.

Topics alternate between music and speech. Sound production and perception, techniques for analysis and synthesis, computer modeling, machine recognition, ensemble effects. Offered on sufficient demand.

566R. Architectural Acoustics and Noise. (3:3:0 ea.) Prerequisite: Physics 561 or consent of instructor.

Topics alternate between architectural acoustics and noise. Computer modeling of enclosures, techniques for measuring noise spectra, room design, noise control. Offered on sufficient demand.

581. Solid-State Physics. (3:3:0) Prerequisite: Physics 431 and 551.
Introduction for students in physics, chemistry, geology, and engineering. Phenomena occurring in solids, and their related physical concepts. Offered 1979-80 and alternate years.

591R. Seminar. (½-1:½-1:0 ea.)
Required of all graduate students every semester in residence.

611, 612. Astrophysics. (3:3:0 ea.) Prerequisite: consent of instructor.
Theory of stellar atmospheres and interstellar matter. Offered on sufficient demand.

617. Advanced Topics in Theoretical Physics. (3:3:0)
Applications of tensor analysis, differential geometry, and differential forms to such topics as mechanics, optics, relativity, and fluid dynamics. Offered 1979-80 and alternate years.

618. Advanced Topics in Theoretical Physics. (3:3:0)
Symmetry principles in quantum physics, emphasizing group theory; applications to solid-state, nuclear physics, relativity, and quantum field theory. Offered 1979-80 and alternate years.

621. Dynamics. (3:3:0) Prerequisite: Physics 322.
Advanced treatment of classical mechanics, including Lagrange's and Hamilton's equations, rigid body motion, and canonical transformations.

623. Dynamics of Continuous Media. (3:3:0) Prerequisite: Physics 621.
Mechanics of systems with an infinite number of degrees of freedom. Topics include elasticity and hydrodynamics. Offered 1978-79 and alternate years.

625. Theory of Relativity. (3:3:0) Prerequisite: Physics 621.
Review of special relativity; general relativity, with applications to modern astrophysics. Offered 1979-80 and alternate years.

626. Relativistic Astrophysics. (3:3:0) Prerequisite: Physics 625.
Applications of general relativity to modern astrophysics, including gravitational collapse, black holes, cosmological models, gravitational waves, etc. Offered on sufficient demand.

627, 628. Advanced Topics in Astrophysics. (3:3:0 ea.) Prerequisite: consent of instructor.
Internal structure of stars; galactic structure. Offered on sufficient demand.

631, 632. Statistical Mechanics. (3:3:0 ea.)
Advanced thermodynamics, classical statistical mechanics, quantum statistics, and transport theory. Offered 1978-79 and alternate years.

641, 642. Mathematical Theory of Electricity and Magnetism. (3:3:0 ea.) Prerequisite: Physics 342.
Advanced electrostatics and magnetostatics, Maxwell's equations and electromagnetic waves, relativistic electrodynamics, radiation theory, and interaction of matter with electromagnetic fields.

645, 646. Plasma Physics. (3:3:0 ea.) Prerequisites: Physics 431, 621, 642.
Plasma state of matter, including a description in terms of both individual particles and fluids, with applications. Offered 1979-80 and alternate years.

651, 652. Quantum Mechanics. (3:3:0 ea.) Prerequisites: Physics 518, 551.
Nonrelativistic quantum mechanics logically developed, with applications.

655, 656. Nuclear Physics. (3:3:0 ea.) Prerequisite: Physics 552.
Fundamental properties of nuclei, nuclear forces, nuclear models, electromagnetic properties of nuclei, particle radioactivity, nuclear reactions, and interaction of radiation with matter. Offered 1978-79 and alternate years.

671. Atomic and Molecular Spectroscopy. (3:3:0) Prerequisite: consent of instructor.
Series and multiplet atomic spectra and rotational, vibrational, and electronic band spectra; determination of atomic and molecular structure. Offered on sufficient demand.

672. Observation and Analysis of Spectra. (3:1:4) Prerequisite: Physics 671 or consent of instructor.
Analysis of optical spectra, with instrumentation and experimentation, including stellar spectroscopic techniques. Offered on sufficient demand.

681, 682. Modern Theory of Solid State. (3:3:0 ea.) Prerequisites: Physics 581, 651.
Quantum mechanical theory of solids, emphasizing the unifying principles of symmetry, energy-band theory, dynamics of electrons and of periodic lattices, and cooperative phenomena. Offered 1978-79 and alternate years.

697R. Research. (1-6:Arr.:Arr. ea.)

699R. Master's Thesis. (Arr.)

711R. Advanced Topics in Physics. (1-3:1-3:0 ea.) Prerequisite: consent of instructor.
Theoretical and experimental physics. Topics vary. Offered on sufficient demand.

751, 752. Advanced Quantum Theory. (3:3:0 ea.) Prerequisite: Physics 652 or consent of instructor.
Topics in relativistic quantum mechanics, including quantum field theory. Offered on sufficient demand.

797R. Research. (1-9:Arr.:Arr. ea.)

799R. Doctoral Dissertation. (6-9:Arr.:Arr. ea.)

Political Science

See Government, Political Science.

Psychology

Professors: Bennion, Bergin, Cundick, Daniels, Fleming (Chairman, 1230 SFLC), Hardy, Howell, Jensen, Payne, Pedersen, B. Robinson, Smith, Stimpson (Graduate Coordinator, 1230-B SFLC), Thorne.
Associate Professors: Brown, Bunker, Higbee, Sorenson, Weight.
Assistant Professors: Budge, Jenkins, Lambert, Maughan, Miller, Murdock, P. Robinson, Wells, Wood.
Special Instructor: Bates.

Undergraduate Program

The Department of Psychology offers to the student a program designed to: (1) provide a breadth and depth of knowledge in the area of human behavior, (2) provide an opportunity for self-development in interpersonal skills and leadership training, and (3) expand the frontiers of knowledge through collaborative student-faculty research and scholarly activity.

The field of psychology offers careers in college and high school teaching; various counseling services in elementary and secondary schools; clinical service in clinics, institutions, and private practice; various psychological services in business, industry, and government; and research in basic and applied psychology. Most professional fields of psychology require advanced degrees, but there are a limited number of opportunities for those with bachelor's degrees, such as high school teaching, probation work, junior-level social work, employment interviewing and testing, and junior-level psychological testing (psychometry).

The study of psychology has particular value for students preparing for teaching and counseling of various kinds, parenthood, social work, law, medicine, business and public administration. Psychology is also of value in supporting other specializations concerned with people and their work.

Undergraduate students may take any psychology course at or below the 500 level during any year, providing they have met the course prerequisites. The course number does not indicate the year that the course is normally taken.

Requirements for an Undergraduate Major

Students majoring in psychology must take Psych. 111; 369 or both 373 and 374; three of the following four courses: 360, 365, 450, and 460; 491R or 497; and additional courses to make a total of 30 semester hours.

In general, students anticipating doing graduate study in psychology should take Psych. 373 and 374. To be admitted into graduate work in the Psychology Department at Brigham Young University, students will be required to complete Psych. 111, 373, 374, and three of the following four courses: 360, 365, 450, and 460.

Students who plan to gain employment in social work upon completion of the bachelor's degree or who plan to enter a graduate school of social work may major in psychology and minor in sociology (social work emphasis). It is recommended that these students take the following psychology courses: Psych. 111, 369 or both 373 and 374, 440, 450, 350 or 357, and at least one of the following: 320, 321, 322, or 445. Required for an undergraduate social work minor are Sociol. 111 (or 112), SocWk. 360, 362, and 6 hours from SocWk. 364, 366, 460R, and Sociol. 389.

Note: Students planning to certify as elementary or secondary school teachers should consult the Education section of the catalog.

Although a minor is not required, students majoring in psychology may select a minor or combination of enrichment courses from a wide range of subjects, depending upon their educational and vocational objectives. Students planning to terminate with a bachelor's degree should choose a minor area or a concentration of courses which broaden their employment opportunities. Suggested areas are secretarial work, various branches of business, recreation, and social work.

Individual academic assistance may be obtained through the College of Social Sciences Advisement Center located in 136 FOB.

Requirements for an Undergraduate Minor

For a minor in psychology the following program is required: Psych. 111, plus electives from the remaining undergraduate and 500-series courses to make a total of 14 semester hours.

Graduate Program

Programs

School Psychology: Master of Science (M.S.).
General Psychology: Doctor of Philosophy (Ph.D.).
Clinical Psychology: Doctor of Philosophy (Ph.D.).
Instructional Psychology: Doctor of Philosophy (Ph.D.).

Entrance Examinations Required. Graduate Record Examination: aptitude and advanced psychology tests.

Application Consideration Dates. January 15 (and June 15 to fill the remaining available positions, if any).

Entry Times. Fall Semester (exceptional cases may be considered for Winter Semester and Spring and Summer Terms).

Master of Science: School Psychology

(Interdisciplinary program jointly offered by the Departments of Psychology and Educational Psychology)

Prerequisites. Background work in psychology, including elementary psychological statistics. Those who have not had courses in child psychology, learning, personality, and exceptional children will be required to take such courses as part of their program.

Minors Permissible. Option 2 only.

Requirements. Minimum of 42 semester hours plus thesis (6-hr. min.—699R). Sixty semester hours are required for certification in many states and 60 semester hours are recommended.

Required Courses. Psych. 640, 641, 670, 680; EdPsy. 500, 625, 638, 647, 680R, 690R, 696R, 699R, or CDFR 430. Students majoring in the Psychology Department are also required to take Psych. 670, 690, and 699R. Students majoring in the Educational Psychology Department are also required to take Stat. 552, EdPsy. 600 and 699R. Additional elective courses required as part of the program are to be selected with approval of the student's committee. Psych. 640, 680 should be taken the first Fall Semester in residence. Psych. 641 should be taken the first Winter Semester in residence. All required courses except Psych. 690, 699R, or EdPsy. 600 and 699R must be taken before EdPsy. 680R.

Note: Most states require the certification of practicing school psychologists. Early in the program students should consult the certification requirements for the state or states in which they may wish to work. These requirements vary widely. The above courses offer a solid core of training; however, most states have special requirements that should be taken into account when planning the graduate program. A file of many states' requirements is maintained at the Psychology Clinic, 108 STFR.

Professional Preparation. Preparation for work in school districts as a school psychologist.

Doctor of Philosophy

Fields. Specialized programs leading to the Doctor of Philosophy degree are offered in the areas of clinical, experimental, and social psychology. In addition to these programs, a doctoral degree in instructional psychology is jointly offered by the departments of Psychology and Educational Psychology. As is the case with the master's degree, students will have an advisory committee to supervise their doctoral work.

Requirements. (1) formal course work as detailed below under the specific major; (2) satisfactory completion of the following core courses with a minimum grade of 3.0 in each course: Psych. 670, 671; plus seven of the following eight courses: 510, 520, 530, 550 (clinical students must take 675 rather than 550. This is not an option for clinical students.), 560, 562, 565, 585; (3) comprehensive examinations (written and oral) covering the student's major and minor fields, ordinarily taken at the beginning of the third year of doctoral study; (4) a dissertation embodying the results of original research of professional caliber done under the supervision of an advisory committee; (5) a foreign language and/or computer science requirement; (6) a final oral examination covering the dissertation.

Minors Permissible. A minor field may be chosen either within or outside the department. Minors within the department may be selected, or a joint minor may be chosen by emphasizing two of the following areas: (1) developmental, (2) motivation, (3) cognitive, (4) social, (5) personality, (6) learning, (7) measurement, (8) physiological.

Clinical Psychology

The clinical training program at Brigham Young University is an American Psychological Association-approved program leading to the Ph.D. degree. This program, which includes an internship, is designed to be completed in four years. A limited number of graduate students are admitted each Fall Semester. Although admissions to the program are highly competitive, applications are encouraged. Candidates with varied backgrounds and strong academic and clinical promise are recruited.

The philosophy of the clinical training program adheres to the scientist-practitioner model, emphasizing research methodology as well as the theory and practicum necessary to develop strong clinical skills.

The program at Brigham Young University is eclectic in its theoretical approach, drawing from a wide range of theories and orientations in an attempt to give the student broad exposure to a diversity of traditional and innovative approaches.

Students draw up their major program in consultation with their advisory committee and must include the following: (1) the requirements as listed above; (2) a one-year internship in a setting approved by the clinical director; and (3) completion of the following courses in the sequence listed:

First Year, Fall

Psych. 640 (3), 645 (3), 670 (3), graduate core course (3), 784R (0).

First Year, Winter

Psych. 641 (3), 671 (3), 680 (3), gradute core course (3), 784R (0).

Second Year, Fall

Psych. 642 (3), 681 (3), 651 (3), graduate core course (3).

Second Year, Winter.

Psych. 675 (3), 682 (3), graduate core course (6).

Third Year, Fall

Psych. 740R (3), elective courses for minor specialization (7).

Third Year, Winter.

Psych. 740R (3), elective courses for minor specialization (8).

An approved elective field of specialization, which involves 15 credit hours and is normally completed during the third year, is to be developed and completed under the direction of the student's advisory committee. These hours can include clinical research, community psychology, mental retardation, criminal psychology, or advanced specialization in psychotherapy or psychodiagnostics. A total of 71 credit hours, plus dissertation (18 hours minimum), is required for the Ph.D. degree in clinical psychology.

During the beginning of the third year, all students must take the comprehensive examination, which covers the various aspects of clinical psychology including research design, professional issues, personality theory, assessment, and treatment procedures. Classes (except Psych. 750, 751, 752, 753), comprehensive examinations, and dissertation must be completed prior to internship. In some instances, the clinical committee may give permission for completion of the dissertation at the internship agency. In such cases, all requirements must be completed within one year after completion of internship.

For additional information about the training program, write to: Director of Clinical Training, Department of Psychology, Brigham Young University, Provo, Utah 84602. Phone: (801) 374-1211, Ext. 4058.

Experimental Psychology

The graduate program in experimental psychology offers a broadly based experience leading to the Ph.D. degree. Areas of specialization include (1) the experimental analysis of behavior, (2) psychobiology, (3) information processing and cognition, and (4) learning. Although fundamental emphasis is placed on laboratory research, the student is expected to be conversant with the major content areas in experimental psychology and skilled in experimental design and methodology.

A total of 54 credit hours plus dissertation credit (18 hours minimum) is required to complete a Ph.D. in experimental psychology. Included in the 54-hour requirement are the core courses previously listed (26 hours). The graduate student in experimental psychology is also expected to take the following courses: Psych. 574 (2), 577 (3), 795R (3) (should be taken each semester during the first year of residency), 797R (Arr.) (should be taken each year).

Course work in the student's area of specialization will be selected by the student with the approval of the advisory committee

Instructional Psychology

The doctoral program in instructional psychology is offered jointly with the Department of Instructional Science in the College of Education. Students in this program are prepared for academic positions and/or research positions dealing with development of instructional programs in universities, colleges, school systems, government, industry, churches, and other organizations with extensive instructional commitments

In this program students are allowed to substitute Psych. 583 for 550 and 574 for 585 in the core requirement. In addition to core courses, students are required to take InSci. 581, 582, 583, 681, 682, and 683 plus 15 hours of advanced instructional science projects. Each student should fulfill an internship each semester through at least the fourth semester in residence. Students should also register in an instructional science seminar each semester in residence. This program requires a minimum of 66 credit hours plus a dissertation.

Social Psychology

The social psychology graduate training program consists of a broad exposure to the content area of social psychology and other areas of psychology, along with extensive training in research. This program leads to the Ph.D. degree.

A total of 54 credit hours plus the dissertation (18 hours minimum) is required to complete the Ph.D. in social psychology. Included in the 54-hour total are the core courses previously listed (27 hours). In addition to the core courses, students majoring in social psychology should take the following courses: Psych. 555 (3), 630 (3), 792R (2), 797R (Arr.).

All students in the doctoral program in social psychology are expected to register for Psych. 530, 670, and 671 (graduate core courses) during their first year in the program. Students should register for 792R a minimum of four semesters from four different instructors, and 797R two semesters for two credit hours prior to the initiation of dissertation research.

Each student is expected to participate in research. The research experience provides an opportunity for independent professional research, with faculty members serving first as supervisors and later as advisers and collaborators.

Courses

111. General Psychology. (3:3:0) Home Study also. (G-SS) Prerequisite for some upper-division psychology classes.

Foundation course covering essentials of modern scientific psychology

211R. Frontiers of Psychology. (3:3:0 ea.) Home Study also (G-SS) Prerequisite: Psych. 111.

Intensive survey of the general field, emphasizing topics not covered in detail in Psych. 111

240. Personal and Social Adjustment. (3:2:1) Home Study also. (G-SS)

Prevention and amelioration of mental and personal difficulties.

320. Psychology of Childhood. (3:3:0) Home Study also. (G-SS)

Critical presentation of research on physical, mental, emotional, and social development of the child and his interests, values, and motivations.

321. Psychology of Adolescence. (3:3:0) Home Study also. (G-SS)

Development and maturation during adolescence, research methodology

322. Psychology of Adult Life. (2:2:0) Home Study also. (G-SS)

Physiological, intellectual, personality, and motivational changes associated with adulthood; geriatric and gerontological emphasis.

330. Industrial Psychology. (3:3:0) Home Study also. (G-SS)
Motivation, morale, safety, efficiency, etc.

336. Personnel Psychology. (3:2:2) (G-SS) Prerequisite: Psych. 111.
Employment interviewing techniques; validation of psychological tests and biographical questionnaires; supervised experience in testing, job analysis, interviewing, and exposure to current personnel programs.

340. Clinical Psychology. (3:3:0) Prerequisite: Psych. 111.
Introduction to personality theories, psychopathology, diagnostic interviewing and testing, psychotherapy techniques, and research methods. Not a practicum.

350. (Psych.-Sociol.) Introduction to Social Psychology. (3:3:0) Home Study also. (G-SS)
Nature of social influence; socialization; concepts of norm, role status; development of beliefs and attitudes; leadership; group processes.

355. (Psych.-Sociol.-Zool.) Sociobiology. (3:3:0)
Animal and human group behavior, emphasizing motivation, altruism, aggression, communication, and reproductive and parental behavior.

357. (Psych.-Sociol.) Interpersonal Growth and Group Processes. (3:1:4) Home Study also. (G-SS)
Building and systematic study of effective interpersonal relationships and group functioning.

358. (Psych.-OrgB.) Leadership Development. (3:2:2)
Principles and practices of successful leadership: decision making, communications, planning, team building, motivation, and interpersonal skills.

359. Environmental Psychology. (3:3:0) Prerequisite: Psych. 111.
The psychological study of the interaction between man and his physical context.

360. Perception and Cognition. (3:3:0) (G-SS) Prerequisite: Psych. 111.
Perceptual organization; information processing; cognitive development; relationships between sensory analysis, perception, memory, learning, language, and problem solving.

365. Motivation. (3:3:0) (G-SS) Prerequisite: Psych. 111.
Theories of motivation and research methods. Motivation as related to learning and cognitive processes. Practical implications.

369. Psychological Methods. (3:3:0) (G-SS) Prerequisite: Psych. 111. Does not satisfity the mathematics, science, logic, and statistics group requirement.
Research strategies and designs, techniques of data collection and analysis, and problems of testing and assessment.

373. Research Methods 1. (G-ML) (4:3:2) Prerequisites: Psych. 111, Math. 105 or equivalent.
Descriptive analysis and hypothesis testing applied to psychological research data.

374. Research Methods 2. (4:2:4) (G-ML) Prerequisites: Psych. 111, 373 or equivalent.
Design, analysis, and reporting of representative psychological investigations.

378. Psychological Tests and Measurement. (3:2:2) (G-SS) Prerequisites: Psych. 111, 373.
Standardized psychological tests and their construction and validation, emphasizing methods for assessing and interpreting human performance and traits.

385. Physiological Psychology. (3:3:0) (G-SS) Prerequisite: Psych. 111.
Physiological foundations of behavior and their relation to behavior phenomena.

399R. Cooperative Education. (0-9:0:0-9 ea.) Prerequisite: Psych. 111.
On-the-job experience. Individually proposed and sponsored.

440. Abnormal Psychology. (3:3:2) (G-SS) Prerequisites: Psych. 111 and 5 additional hours in psychology.
Dynamics of maladjustment; review of major psychological disorders and therapeutic procedures. Fieldwork at Utah State Hospital.

445. Exceptional Children. (3:3:0) Home Study also. (G-SS) Prerequisite: Psych. 111.
Diagnosis of exceptionalities and their psychological significance; gifted, mentally retarded, and physically and emotionally handicapped children.

450. Personality. (3:3:0) Home Study also. (G-SS) Prerequisite: Psych. 111.
Development and organization of personality; interaction of biological, psychological, and cultural determinants.

454. Psychology of Religion. (2:2:0) (G-SS) Prerequisite: Psych. 111.
Classification of religious behavior and experience; source of religious motivation; religion and the growth process.

460. Principles of Learning. (3:3:0) (G-SS) Prerequisite: Psych. 111.
Representative experiments, types of learning, principles of effective learning.

480. Behavioral Aspects of Sociobiology. (3:3:0)
Examination of social phenomena from the perspectives of behavioral evolution and ecology, emphasizing animal behavior.

483. Issues in Conditioning and Learning. (3:3:0) Prerequisite: Psych. 111.
Recent developments in these areas.

491R. Psychology Seminar. (1:1:0 ea.) (G-SS)
One seminar required of psychology majors. Reports and discussions of special topics and current psychological literature.

493R. Laboratory and Field Experience. (1:1:0 ea.) Prerequisite: consent of instructor.

495R. Independent Readings. (1-2:Arr.:Arr. ea.) Home Study also. (G-SS) Prerequisite: consent of instructor.

497. Senior Project. (2:0:0) (G-SS) Prerequisites: Psych. 373, 374, and senior standing.
Individual research. Oral and written report required.

510. History and Systems of Psychology. (3:3:0) Prerequisite: graduate standing.

511. Instructional and Communicative Techniques. (2:1:2) Prerequisite: graduate standing in psychology.
Faculty-supervised experience in planning, conducting, and teaching an undergraduate course.

520. Advanced Developmental Psychology. (3:3:0)
Major research in genetic psychology, emphasizing theory, content, and methodology.

526. Mental Retardation. (2:2:0) Prerequisite: Psych. 378 or equivalent.

530. (Psych.-Sociol.) Theory and Research in Social Psychology. (3:3:0) Prerequisite: Psych.-Sociol. 350.
Understanding the individual interaction.

550. Personality Theory. (3:3:0) Prerequisites: Psych. 111, 450, and 5 additional hours in psychology.
Contemporary theories of personality developed within the framework of major psychological systems.

555. (Psych.-Sociol.) Group Dynamics. (3:3:0) Prerequisite: Psych.-Sociol. 350.
Research and theories. May be used for credit either in psychology or sociology, but not in both.

560. Learning Theory. (3:3:0) Prerequisites: Psych. 111, 460, and 5 additional hours in psychology.

Critical review of current theories and persistent problems.

561. Psycholinguistics. (3:3:0) Prerequisite: Psych. 111.
Verbal learning and verbal behavior; social implications of language usage.

562. Cognitive Processes. (3:3:0) Prerequisites: Psych. 360 or equivalent; graduate standing or consent of instructor.
Major theoretical and empirical developments. Interaction of sensory, perceptual, learning, and thinking processes.

565. Motivational Psychology. (3:3:0) Prerequisites: Psych. 365 or equivalent; graduate standing or consent of instructor.
Theoretical, historical, and empirical overview; recent trends and issues. Role of animal studies; methodological problems.

570. Computer Use in the Behavioral Sciences. (3:3:6) Prerequisites: Psych. 373, ComSci. 231, or equivalent.

572. Psychological Scaling. (3:3:0) Prerequisite: Psych. 373.
Scaling theory and methodology, emphasizing measurement in psychophysics and differential psychology. Offered alternate years.

573. Multivariate Analysis in Psychology. (3:3:0) Prerequisite: Psych. 373.
Principle descriptive statistics used to analyze multiple measurements: factor analysis, canonical correlation, multivariate analysis of variance and covariance, and multiple discriminant analysis. Offered alternate years.

574. Advanced Experimental Psychology. (2:1:5) Prerequisite: Psych. 111, 374, or equivalent.
Principles of instrumentation and experimental designs; planning, conducting, and reporting experiments.

577. Laboratory Instrumentation and Techniques. (3:1:4) Prerequisite: Psych. 374.

583. Behavior Modification Techniques. (3:2:2)
Practical applications of behavior modification to academic, discipline, and emotional target behaviors of individuals and groups.

585. Advanced Physiological Psychology 1. (3:3:0) Prerequisite: Psych. 385 or consent of instructor.
Critical study of physiological processes and psychological functions, including sensation, emotion, sleep and activity, motivation, and learning.

587. Psychopharmacology. (3:0:0) Prerequisite: Psych. 585 or equivalent.
Major classes of psychoactive drugs, emphasizing drug-behavioral interactions.

597R. Independent Research. (1-3:0:0 ea.)

599R. Cooperative Education. (0-9:0:0-9 ea.) Prerequisite: Psych. 111.
On-the-job experience. Individually planned and sponsored.

630. (Psych.-Sociol.) Attitude Change. (3:3:0) Prerequisite: graduate standing or consent of instructor.
Attitude development, change, and assessment, including both individual and mass persuasion.

640. Psychodiagnostics 1: Intelligence Testing. (3:3:5) Prerequisite: acceptance in clinical psychology.

641. Psychodiagnostics 2: Child and Adolescence. (3:2:6) Prerequisite: acceptance in clinical or school psychology.

642. Psychodiagnostics 3: Adult. (3:2:3) Prerequisite: acceptance in clinical psychology.

644. Rorschach Techniques. (3:2:5) Prerequisite: acceptance in clinical psychology.

645. Issues in Clinical Psychology. (3:3:3) Prerequisite: acceptance in clinical psychology.

646. Community Mental Health. (3:2:2) Prerequisite: acceptance in clinical psychology.

651. Psychopathology. (3:3:2) Prerequisite: 9 hours in psychology.

658. (Psych.-OrgB.) Practicum: Designing Training Programs. (3:2:2)
Theory and method of experience-based workshops and seminars, emphasizing management, leadership, and human relations training.

670. Advanced Statistics 1. (3:3:2) Prerequisite: Psych. 373.

671. Advanced Statistics 2. (3:3:2) Prerequisite: Psych. 670.

675. Personality Dynamics. (3:3:0) Prerequisites: undergraduate core courses and consent of instructor.

678. Measurement Theory. (3:3:0)

680. Psychotherapy 1: Child and Family. (3:3:3) Prerequisite: acceptance in clinical psychology.

681. Psychotherapy 2: Adult. (3:3:0) Prerequisite: acceptance in clinical psychology.

682. Psychotherapy 3: Group. (3:1:6) Prerequisite: acceptance in clinical psychology.

683. Behavior Modification Therapy. (3:2:1) Prerequisite: acceptance in clinical psychology.

685. Advanced Physiological Psychology 2. (3:3:0)

690. Seminar: Research Problems. (2:2:0)

695R. Independent Readings. (1-2:Arr.:Arr. ea.)

699R. Master's Thesis. (6-9:Arr.:Arr. ea.)

740R. Clinical Practicum. (3:0:8 ea.) Prerequisite: acceptance in clinical psychology.

741R. Practicum in Assessment. (3:0:8 ea.) Prerequisite: acceptance in clinical psychology.

742R. Projects in Clinical Psychology. (3:0:8 ea.) Prerequisite: acceptance in clinical psychology.

749R. Clinics Practicum. (1-3:0:3-6 ea.) Prerequisite: acceptance in clinical psychology.

750, 751, 752, 753. Clinical Internship. (2:0:40 ea.) Prerequisite: acceptance in clinical psychology.

784R. Interpersonal Skills.(1:0:3) Prerequisite: acceptance in clinical psychology.

792R. Seminar: Social Psychology. (2:2:0 ea.) Prerequisites: consent of instructor; Psych.-Sociol. 350.

795R. Seminar: Experimental Psychology. (3:3:0 ea.) Prerequisite: consent of instructor.

796R. Seminar: Clinical Psychology. (2:2:4 ea.) Prerequisite: acceptance in clinical psychology.

797R. Independent Research. (1-4:0:3-12 ea.) Prerequisite. consent of instructor.

799R. Doctoral Dissertation. (6-9:Arr.:Arr. ea.)

Public Policy Studies

See Government, Public Policy Studies.

Recreation Education

Professors: Call, Hafen (Chairman, 273-C RB), C. Jensen, Shaw, Thorstenson.
Associate Professors: deHoyos, A. Heaton, Hyatt, Naylor, Olsen.
Assistant Professors: Hansen, Palmer.
Instructor: Holley

The Department of Recreation Education assumes the responsibility of (a) preparing professional recreation leaders for responsible positions with a variety of agencies, (b) developing skillful leaders for church and community programs, (c) conducting a large variety of intramural activities, (d) providing leadership for recreational clubs, and (e) offering consultation services for campus and community organizations. The department offers professional preparation programs at both the undergraduate and graduate levels, with several areas of emphasis at each level.

Undergraduate Program

A student who is working on the bachelor's degree may obtain a recreation major, a minor, a teaching minor, or a composite major.

Recreation Education Major. Majors are required to complete 38 hours of core classes, and in addition they must select one to three areas of special emphasis. Included in the core are: Rec. Ed. 123, 301, 337, 371, 387, 407, 505, 480R, courses in arts and crafts, BusEd. 305, Health 430, and physical education courses in individual sports. Possible areas of emphasis are: camping education, community and family recreation, dance, minority relations, parks planning and development, sports, therapeutic recreation, and youth-adult service agencies. Detailed program outlines are available at the College of Physical Education Advisement Center, 205 Richards Building.

Recreation Education Minor. Students minoring in recreation education should take the following courses: RecEd. 123, 301, 337, 407, and 6 additional semester hours selected by an adviser from the Recreation Education Department. (Those desiring a teaching minor should obtain a detailed outline which is available at the advisement center.)

Composite Major: See Education section of this catalog.

Intramural Participation. Students are encouraged to participate in the intramural activities listed below, which are offered on a noncredit basis. These activities are conducted from 6:00 p.m. to 10:00 p.m. on Tuesday, Wednesday, Thursday, Friday, and all day Saturday. Further information is available at the Intramural Office, 112 RB.

Coed Activity

Badminton, bowling, darts, golf, horseshoes, racquetball, skiing, softball, table tennis, tennis, and volleyball.

Individual Sports

Badminton (singles and doubles), checkers, chess, handball (singles and doubles), horseshoes (singles and doubles), racquetball (singles and doubles), table tennis (singles and doubles), and tennis (singles and doubles).

Special Events

Arm wrestling, bicycle racing, golf, obstacle course, road rally, swimming, track and field (coed), turkey trot, weight lifting, and wrestling.

Team Sports

Basketball (single and coed), flag football, coed inner tube water polo, soccer, softball (single and coed), volleyball (single and coed), and water basketball.

Graduate Program

The master's degree program provides the opportunity for students to obtain a Master of Arts (thesis) or Master of Recreation Education. Areas of special emphasis include the following: community school recreation, outdoor recreation, recreation administration, and therapeutic recreation. Detailed program outlines are available at the department chairman's office, 273-C RB.

Programs. Master of Arts (M.A.), Master of Recreation Education (M.R.Ed.).

Entrance Examination Required. English test.

Application Consideration Dates. Same as Graduate School deadlines.

Entry Times. Any regular registration.

Master of Arts

Prerequisites: Undergraduate major or minor in recreation. Upon special permission, students may be admitted with other undergraduate work but must complete selected prerequisite classes.

Fields. Community school leadership, municipal recreation administration, outdoor recreation, therapeutic recreation.

Minors Permissible. Any established graduate minor in a complementary discipline.

Requirements. Minimum of 26 semester hours plus thesis (6-hr. min.).

Required Courses. Community school option: RecEd. 505 or EdAd. 600, 585, 605, 679R, 692 or EdAd. 650 and 696R. All other options: RecEd. 609, 692, 694, and Stat. 552. For further information, consult department outline.

Master of Recreation Education

Prerequisites. Undergraduate major or minor in recreation. Upon special permission, students may be admitted with other undergraduate work but must complete selected prerequisite classes.

Fields. Community school leadership, municipal recreation administration, outdoor recreation, therapeutic recreation.

Minors Permissible. Any established graduate minor in a complementary discipline.

Requirements. Minimum of 36 semester hours.

Required Courses. Community school option: RecEd. 505 or EdAd. 600, 585, 605, 679R, 692, or EdAd. 650 and 696R. All other options: Rec. Ed. 585, 609, 692, and 694. For further information, consult department outline.

Courses

123. Introduction to Outdoor Recreation. (1:0:2)
Participation in a variety of outdoor camping activities.

223. Fundamentals and Techniques of Mountaineering. (2:1:3)
Climbing; knowledge of food, climate, and clothing; practices for safety and rescue.

299R. Mini-Fieldwork Experience. (2-3:1:55½)
Closely supervised experience in public and/or private recreational programs.

301. Introduction to Recreation. (2:2:0) Home Study also.
Understanding the total field of recreation.

337. Philosophy of Recreation. (2:2:0) Home Study also. (G-SS)
The leisure era and its challenge to the field of recreation.

370. Introduction to Recreation Therapy. (3:2:2)
Concepts and practices of recreation therapy.

371. Family Recreation. (2:2:0) Home Study also.
Social activities for small groups and families.

387. Planning for Social Recreation. (2:2:0) Home Study also.
Leadership skills for directing large social groups.

388. Leadership in Dance. (2:2:0)
Experience and training in dance for community, school, and church recreation leaders.

399R. Total Fieldwork Experience. (2-9:1:55½)
Work with experienced directors. Maximum of 12 credit hours.

405. Scheduling and Supervising Intramural Play. (2:1:1)
Intramurals and tournaments in school and community programs. Includes scheduling, supervision, and administration of tournament activity programs.

407. Administration of Neighborhood Parks and Community Centers. (3:3:0) Prerequisites: RecEd. 301, 337, 387.
Organization and administration of playground and community center programs.

410. Problems and Trends in Outdoor Recreation. (2:2:0)
Role of outdoor recreation in modern society, including government and nongovernment functions.

470. The Therapeutic Recreation Program. (2:1:2) Prerequisite: RecEd. 370 or equivalent.
Organization and administration of recreational therapy programs in resident and nonresident facilities.

471. Problems in Recreation for the Neuropsychiatric Patient. (2:1:2) Prerequisites: RecEd. 370, 470, or equivalent.
Programming for resident, day-care, and out-patient facilities for emotionally or psychologically disturbed patients.

472. Therapeutic Recreation in Rehabilitation. (2:1:2) Prerequisite: RecEd. 370, 470, or equivalent.
The rehabilitation team, and the relationship of the recreation therapist to other team members.

502R. Camping Workshop. (2:2:4 ea.)
Training for a week in a primitive area. Maximum of 4 credit hours.

503. Administration of School and Community Camps. (2:2:Arr.)
Administration of camps and outdoor programs; site selection and development; program planning and staffing.

505. Administration of Community Recreation. (3:3:0) Prerequisites: RecEd. 301, 337.
.Facilities, personnel, financing, budgeting, legal aspects, and departmental organization of community recreation.

570. Therapeutic Recreation for Neurological Handicaps. (2:1:2) Prerequisite: RecEd. 370, 470, or equivalent.
Recreation programs for individuals with neurological and other handicaps.

583. Workshop in Recreational Dance. (1-2:0:40-80)
Advanced techniques for teaching dance to recreation groups.

585. The Community School. (2:2:1) Home Study also.
History, organization, funding, leadership, facilities, and value of the community school.

599R. Internship in Recreation. (2-9:1:55½)
Work with experienced directors. Maximum of 12 credit hours.

605. Community School Administration. (2:2:0)
Administrative problems of leadership, organization, finance, legal aspects, and public relations.

609. Recreation Program. (2:1:Arr.) Prerequisites: RecEd. 407, 505, 962; or consent of instructor.
Practicum in analysis and design of community and agency recreation programs.

692. Research Methods in Recreation. (3:3:0)
Preparation of research proposal and guidelines for thesis writing.

694. Seminar in Readings. (2:2:0)
Readings from professional literature; group discussion.

696R. Seminar in Problems. (1-2:1-2:0 ea.)
Maximum of 4 credit hours.

698. Field Projects. (1-4:2-5:0)

699R. Master's Thesis. (6-9:Arr.:Arr. ea.)

Religious Instruction

Ancient Scripture

Professors: R.L. Anderson, Bankhead, Cheesman, Patch, H.D. Peterson, Rasmussen (Dean, 144 JSB), Ricks.
Associate Professors: Brown, Felt, Harris, Matthews (Chairman, 124 JKB), Meservy, Nyman, Parsons, Shields, Taylor.
Assistant Professors: Griggs, Ledbetter, Ludlow, McConkie.

Undergraduate Program

This department, along with its companion Department of Church History and Doctrine, provides a basic service for all students of the University. It is the intent and purpose of Religious Instruction to provide all students the opportunity to grow and mature in their religious concepts and appreciations as they develop in their academic disciplines at the University. After completion of the primary Book of Mormon courses, students should choose additional courses that best suit their needs and interests.

Since undergraduate majors in religion are not offered, there are no areas of specialization.

Graduate Program

No graduate major is offered, but there is a graduate minor on both the master's and doctoral levels.

Fields. Book of Mormon, Old Testament, New Testament, Pearl of Great Price.

Requirements. A minimum of 9 semester hours of approved course work is required for a minor in a master's program. In a doctoral program the number of hours required is determined by consultation with the department offering the major, but not less than 12 semester hours. The department chairman must approve the course selection and appoint a committee representative in each instance in which a minor in ancient scripture is sought.

Courses

121, 122. Introduction to the Book of Mormon. (2:2:1 ea.) Home Study also. (G-R)
Origin, content, and teachings of the Book of Mormon. (Returned missionaries should take upper-division courses 421 and 422.)

211, 212. (Also 211R, 212R for Jerusalem Study Abroad students) The New Testament. (2:2:0 ea.) Home Study also. (G-R)
Course 211 deals with the Gospels; Course 212 with the Book of Acts, Paul, and the literature of the early Church.

301, 302. (Also 301R, 302R for Jerusalem Study Abroad students) The Old Testament. (2:2:0 ea.) Home Study also. (G-R)
Course 301 is an introduction to the structure and teachings of the Old Testament from Genesis to 1 Kings 11. Course 302 considers 1 Kings 12 to Malachi.

304. Writings of Isaiah. (2:0:0)
A course to enhance appreciation of historical, prophetic, doctrinal, and literary values of Isaiah, emphasizing latter-day interpretation and application.

327. The Pearl of Great Price. (2:2:0) Home Study also. (G-R)
Origin and content of the Pearl of Great Price.

391R. Special Studies in Religion. (1:1:0 ea.) Home Study also.

421, 422. Introduction to the Book of Mormon. (2:2:0 ea.) (G-R)

The origin, content, and teachings of the Book of Mormon (for returned missionaries and mature students).

501. Analysis of the Old Testament: The Pentateuch and Historical Books. (3:3:0)

502. Analysis of the Old Testament: Prophetic Books. (2:2:0)

503. Analysis of the Old Testament: Poetic and Wisdom Literature. (2:2:0)

510R. Special Topics in Ancient Scripture. (2-3:2-3:0 ea.)
Special topics in scriptural themes.

511. The Gospels. (2:2:0)

512. Paul's Life and Letters. (2:2:0)

513. The General Epistles and the Apocalypse. (2:2:0)

514. Historical Background of the New Testament. (2:2:0)

521, 522. Analysis of the Book of Mormon 1, 2. (3:3:0 ea.)

523. External Evidence of the Book of Mormon. (2:2:0)

527. History and Doctrines of the Pearl of Great Price. (3:3:0)

606. The Apocrypha and Pseudepigrapha. (2:2:0)

610R. Graduate Seminar in Ancient Scripture (1-6:1-2:0 ea.)

620R. Readings in Ancient Scripture. (1-6:0:0 ea.)

Church History and Doctrine

Professors: Backman, Barron, Berrett, Bowen, Cowan, Hartshorn, Horsley, Palmer, M. Peterson, Turner.
Associate Professors: A. G. Anderson, W. K. Anderson, Cannon, Fugal, Garrard, Pace, Porter (Chairman, 124 JSB).
Assistant Professors: Cook, Moss, Otten, Perkins, Stevenson.

The Department of Church History and Doctrine exists for the purpose of helping students gain an understanding of the events and processes that have made The Church of Jesus Christ of Latter-day Saints what it is today.

Undergraduate Program

There is no undergraduate major available in the Department of Church History and Doctrine.

Graduate Program

Minor Only

No graduate major is offered in the department, but there is a graduate minor on both the master's and doctoral levels.

Prerequisites. RelC. 341, 342, or a knowledge of the contents of *The Comprehensive History of the Church,* by B. H. Roberts.

Fields. Christian history, Doctrine and Covenants, LDS history, theology, and world religions.

Requirements. A minimum of 9 semester hours of approved course work is required for a minor in a master's program. In a doctoral program the number of hours required is determined by consultation with the department offering the major, but it must not be less than 12 semester hours. The department chairman must approve the course selection and appoint a committee representative in each instance in which a minor in Church history and doctrine is sought.

Courses

130. Fundamentals of the Gospel. (2:2:0)
Supplements local priesthood missionary preparation through scripture study, religious history, and cultural backgrounds. Correlates with the Uniform System for Teaching Families.

231, 232 (Also 231R, 232R for all Semester Abroad students other than those in the Jerusalem program). The Gospel in Principle and Practice. (2:2:0 ea.) Home Study also. (G-R)
Considering principles of the gospel of Jesus Christ in light of the practical needs and problems of today's youth.

261. (RelC.-Geneal.) Introduction to Genealogy. (2:2:0) Home Study also. (G-R)
Genealogical concepts, doctrinal background, essential record sources, modern research methods, numerous genealogical forms and their uses, successful correspondence, writing biographies and autobiographies, using the Genealogical Society Library, and starting a book of remembrance.

324, 325. The Doctrine and Covenants. (2:2:0 ea.) Home Study also. (G-R)
Origin and content of the Doctrine and Covenants. Course 324 discusses the history of Sections 1 through 70. Course 325 considers Sections 71 through 136.

333. Teachings of the Living Prophets. (2:2:0) Home Study also. (G-R)
Doctrines of the gospel, emphasizing teachings of the living prophets and recent conference reports.

334. Priesthood and the Living Church. (2:2:0) (G-R)
Basic principles of Church government, including doctrine of the priesthood, procedures of Church correlation, and functions of special Church agencies.

335. Mormonism and Modern Scientific Thought. (2:2:0) (G-R)
Significant theological-philosophical concepts in Mormonism, as they relate to scientific assumptions involving God, man, and the universe.

338. Your Religious Problems. (2:2:0) (G-R)
Problems pertaining to the individual student.

341. Latter-day Saint Church History to 1846. (2:2:0) Home Study also. (G-R)
Chronological study of Church history and doctrine.

342. Latter-day Saint Church History after 1846. (2:2:0) Home Study also. (G-R)
Chronological study of Church history and doctrine.

344. The Church in the Twentieth Century. (2:2:0) (G-R)
Organizational development, programs, literature, teachings, and biographies of Church leaders.

351. Mormonism and the World's Religions. (2:2:0) (G-R)
Survey of non-Christian religions and comparisons with Mormon doctrine.

352. Mormonism and the Christian Tradition. (2:2:0) (G-R)
Historical Christianity from its inception to the present.

353. American Christianity and the Rise of Mormonism. (2:2:0) (G-R)
Historical roots and beliefs of the major Christian faiths of America, emphasizing Mormonism.

362. (RelC.-Geneal.) Genealogy and the LDS Family. (2:2:0) (G-R) Prerequisite: RelC. 261.
Methods of research, indexes, filing, records, family histories, and family organizations. (Refer to the Genealogy section of this catalog for additional courses.)

365. Applying Gospel Principles in Church Youth Programs. (2:2:0) Home Study also. (G-R)

370. Introduction to Teaching Seminary. (2:2:0) (G-R)
Philosophy, objectives, subject-matter areas, and related problems associated with religious education at the secondary level.

390R. Special Studies in Religion. (1:1:0 ea.)

391R. Special Studies in Religion. (1:1:0 ea.) Home Study also.

392R. Special Studies in Religion. (1:1:0 ea.)
Topical studies based on student interest and teacher expertise. For senior students only.

471. Methods of Teaching Seminary. (2:2:0) (G-R) Prerequisite: consent of instructor.
For prospective seminary teachers.

473. Seminary Student Teaching. (2:0:0) Prerequisite: RelC. 471.
Evaluation of prospective seminary teachers.

490R. Senior Seminar in Religion. (1:1:0 ea.) (G-R)

491R. Senior Seminar in Religion. (1:1:0 ea.) (G-R)

524, 525. Analysis of the Doctrine and Covenants 1, 2. (3:3:0 ea.)

530. LDS Theology. (2:2:0)

540R. Special Topics in Church History and Doctrine. (2-3:2-3:0 ea.) Home Study also but restricted to commissioned and prospective chaplains.
Topics include Joseph Smith's thought, LDS theology, schismatic movements in Mormon history, historical setting of Mormonism, comparative American religions, Near Eastern religions, etc.

541. Documents of LDS Church History (1820-1839). (3:3:0)

542. Documents of LDS Church History (1839-1850). (3:3:0)

543. Documents of LDS Church History (1850-1900). (3:3:0)

544. Documents of LDS Church History (1900 to Present). (3:3:0)

551. History of the Early Church through the Fourth Century. (3:3:0)

552. Medieval and Reformation Christianity. (3:3:0)

553. History of the Christian Church since the Seventeenth Century. (3:3:0)

555. Comparative World Religions. (2:2:0)

556. Comparative World Religions. (2:2:0)

640R. Graduate Seminar in Church History and Doctrine. (1-6:1-2:0 ea.)
Topics include the Doctrine and Covenants, LDS Church history, LDS theology, Christian history, Christian theology, world religions, etc.

650R. Readings in Church History and Doctrine. (1-6:0:0 ea.)
Topics include the Doctrine and Covenants, LDS Church history, LDS theology, Christian history, Christian theology, world religions, etc.

Social Science

Course

100. American Heritage. (3:3:1)
A synthesis of American constitutional and economic principles, and patterns of historical development.

Sociology

Professors: Bahr, Blake, Bradford, Brower, Chadwick, Christiansen, Condie (Chairman, 121 KMHW), Craig, Duke, (Graduate Coordinator, 125 KMHW), Kunz, Larsen, Peterson, W. Smith, Staley, Warner

Associate Professors: Albrecht, DeHoyos, England, Seggar, Spencer.

Assistant Professors: R. Johnson, J. Smith, B. Johnson.

Sociology Undergraduate Program

Two majors are offered in the Department of Sociology leading to the Bachelor of Science degree: sociology and social work. A minor is also offered in sociology. The undergraduate curriculum is organized into four tracks:

Professional Sociology. Students who select the professional sociology track should plan to obtain an advanced degree and become professional sociologists—experts who will teach, conduct research, write, consult, etc.

Applied Sociology. Students in the applied sociology track have a primary interest in utilizing sociological knowledge rather than in producing new knowledge. Such diverse occupational endeavors as community planning, industrial relations, governmental service, crime control, recreation, and others might be included under applied sociology.

General Sociology. The general sociology track provides students with a broad liberal arts background for such areas as business, work within various social agencies, or preparation for marriage and parenthood. This track would also be helpful for students who are preparing to do further study in law, medicine, or dentistry.

Secondary Teaching. Students who desire to prepare themselves for employment in secondary schools should select this track and complete the requirements for secondary school certification as given in the Department of Education section of this catalog.

Requirements for Majors

Required Core. Students who enter any of the tracks are required to take the following courses: Sociol. 111, 205, 311, 300, 320, and 350. Sociol. 305 may be taken in lieu of both Sociol. 205 and 300. Other electives should be taken for a minimum total of 33 hours. All undergraduate sociology majors are required to pass each core course with a grade of C (2.0) or higher in order to have these courses count toward completion of graduation requirements.

Other Required Courses. In addition to the required core, the following courses are recommended to students in the following tracks:

Professional Sociology: 112, 245, 330, 380, 411.

Applied Sociology: 115, 330, 380, 411, 430.

General Sociology: 115, 370, 411.

Secondary Teaching: Students selecting this track are required to take, in addition to the core courses, Sociol. 112, 526, and either 330 or 380. Other courses selected as electives must be from the following list: Sociol. 115, 223, 245, 352, 357, 381, 383, 389, and 411. Secondary teaching majors are also required to take SecEd 476 and Health 362.

Undergraduate Minors in Sociology

Sociol 111 is recommended and a total of 15 hours is required. The student may choose other courses according to personal area of interest. For a secondary education minor, see Sociology under the Education section of this catalog

Graduate Program

Programs. Master of Science (M.S.), Doctor of Philosophy (Ph.D.).

Master of Science

Requirements. (1) Completion of a minimum of 30 hours of graduate work, including at least 15 hours of formal course work in sociology and at least 6 hours on a thesis or research project; (2) demonstration of competence in the following tool areas: sociological theory, research methods, and statistics; (3) completion of an acceptable thesis or research project; and (4) an oral examination on the thesis or research project and course work.

Required Courses. Sociol. 600, 606, 610.

Doctor of Philosophy

Prerequisite. Master's degree in sociology or the equivalent.

Fields. Family sociology, family studies, social organization, social psychology.

Minors Permissible. An approved minor field.

Requirements. (1) Completion of 60 semester hours of acceptable graduate work, including at least 48 semester hours of graduate work in sociology completed in graduate status, exclusive of the doctoral dissertation and the master's thesis; (2) demonstration of competence at the doctoral level in the following tool areas, both by completion of required course work and examination: sociological theory, research methods, and statistics; (3) demonstration of competence by adequate performance in a comprehensive written examination in two of the following special areas: social organization, social psychology, deviant behavior, race and ethnic relations, family sociology, demography and human ecology; (4) preparation and oral defense of a dissertation project prospectus; (5) completion and oral defense of an acceptable dissertation.

Required Courses. All courses required for the Master of Science degree in sociology or their equivalent and Sociol. 700, 706, and 711, plus at least 9 hours of graduate course work in each of the two special areas selected for comprehensive examinations.

Graduate Minor in Sociology

Students working toward a master's degree in another department may complete a minor in sociology by satisfactorily completing Sociol. 610 plus graduate semester hours in areas related to their major specialization, as approved by their advisory committee.

Students working toward a doctoral degree in another department with a minor in sociology must, in collaboration with the member of their committee from the sociology faculty, outline a program in accordance with the needs of the student. The student selects a specialty area from the fields listed previously and must take the same comprehensive examination given to students from the Department of Sociology who have selected that area.

Sociology Courses

111. Introductory Sociology. (3:3:0) Home Study also. (G-SS)
Foundation course for all sociological study. How social organization affects human behavior.

112. Modern Social Problems. (3:3:0) Home Study also. (G-SS)
Analysis of forces that produce war, crime, divorce, suicide, race friction, etc.; alleviation and prevention programs.

115. Applied Sociology. (3:3:0) Home Study also. (G-SS)
Sociological principles and findings in such fields as teaching, business and industry, nursing, military life, and medicine.

205. Applied Social Statistics. (3:3:0) Home Study also.
Elementary statistical procedures. Emphasizes descriptive techniques and interpretation of statistical data.

223. Racial and Minority-Group Relations. (3:3:0) (G-SS)
Social relations among ethnic, racial, and religious groups.

245. World Populations. (3:3:0) (G-SS)
Relationship of population factors to problems encountered in education, labor, and government.

300. Methods of Research in Sociology. (3:3:0) Home Study also. (G-SS) Prerequisite: Sociol. 111 or equivalent or consent of instructor.
Tools of research and electronic data processing and analysis.

305. Introductory Social Research. (5:5:0) Prerequisite: Sociol. 111 or equivalent.
Problem formulation, data collection, statistical analysis, writing, and presentation of results.

311. Sociological Analyses. (3:3:0) (G-SS)
Introduction to and evaluation of current theories of social behavior.

315R. Field Experience in Applied Sociology. (1-3:1-3:2-6 ea.) Prerequisite: previous completion of or concurrent registration in Sociol. 115.
Practical experience with community organizations; concurrent seminars.

320. Social Organization. (3:3:0) (G-SS) Prerequisite: Sociol. 111.
How social interactions, groups, institutions, roles, statuses, and culture affect human behavior.

325. Introduction to the Society of Religion. (3:3:0) (G-SS) Prerequisite: Sociol. 111.
Factors influencing the origin, growth, and organizational development of religious systems.

329. Medical Sociology. (3:3:0) (G-SS) Prerequisite: Sociol. 111 or Psych. 111.
Social epidemiology, the sick role, sociocultural definitions of and responses to illness, and the organization of medical-health delivery systems.

330. Theory of Social Change and Modernization. (3:3:0) (G-SS) Prerequisite: Sociol. 111.
Factors, processes, and directions of social change in contemporary society from diverse theoretical points of view.

350. (Sociol.-Psych.) Introduction to Social Psychology. (3:3:0) Home Study also. (G-SS) Prerequisite: Sociol. 111 or Psych. 111.
Nature of social influences; socialization; concepts of norm, role status; development of beliefs and attitudes; leadership; group processes.

351. Analysis of the Communication Process. (2:2:0) (G-SS) Prerequisite: Sociol. 111.
Selected social effects of the communication process.

352. Collective Behavior. (2:2:0) (G-SS)
Mass behavior: mobs, riots, and crowds.

355. (Sociol.-Psych.-Zool.) Sociobiology. (3:3:0) (G-SS)
Animal and human group behavior, emphasizing motivation, altruism, aggression, communication, and reproductive and parental behavior. Offered Winter Semester.

357. (Sociol.-Psych.) Interpersonal Growth and Group Processes. (3:1:4) Home Study also. (G-SS)
Building and systematic study of processes that facilitate more effective interpersonal relationships and group functioning.

361. (Sociol.-CDFR) Family Relationships. (3:3:0) Home Study also. (G-SS)
Interaction and interpersonal relationships through stages of the family life cycle; influence of the family on its members in developing values, goals, attitudes, and behavior patterns.

365. Sociology of Aging. (2:2:0) Prerequisite: consent of instructor.
Demographic and societal factors affecting aging, agencies serving older citizens, and the role of the com-

munity in solving problems of the aged. Required for students on the Rocky Mountain Gerontology Center Training Program. Offered Fall Semester.

370. The Sociology of Urban Life. (3:3:0) (G-SS)
Norms, social controls, and social processes in both historical and contemporary perspectives.

380. Deviance and Social Control. (3:3:0) (G-SS) Prerequisite: Sociol. 112.
Theories of deviance; programs for prevention and treatment, emphasizing types, techniques, and consequences of social control programs.

381. Introductory Criminology and Penology. (3:3:0) Home Study also. (G-SS)
Nature and extent of criminal behavior; current theory and research related to causes of crime and treatment of criminals.

383. Juvenile Delinquency (3:2:0) Home Study also. (G-SS) Prerequisite: Sociol. 111.
Lawlessness of children and adolescents: causation, treatment, prevention, and outlook.

389. Social Aspects of Mental Health. (3:3:0) (G-SS) Home Study also.
Personality disorders and emotional maladjustments which originate in group life; social causation, treatment, and prevention of mental ills.

390R. Special Topics in Contemporary Sociology. (1-3:1-3:0 ea.) Home Study also. (G-SS) Prerequisite. consent of instructor.
Course content varies from year to year.

398R. People and Cultures around the World. (1-3:Arr.:Arr. ea.) Home Study also. (G-SS)
Analyzes the principal sociological aspects of those societies included in the BYU Travel Study tours.

411. Development of Sociological Theory. (3:3:0) (G-SS) Prerequisites: Sociol. 211 and 300.
Development of prominent sociological theories and the contributions of outstanding theorists.

412. Contemporary Theory. (3:3:0) (G-SS) Prerequisites: Sociol. 211, 300, and 411.
Contributions to and trends in sociological theory since 1950.

430. Planned Change and Community Organization and Action. (3:3:0) (G-SS) Prerequisite: Sociol. 330.
Prescriptive models and strategies of planned change.

504. Mathematical Sociology. (3:3:0) (G-SS) Prerequisite: Math. 105.
Mathematical techniques of simulating and modeling social processes.

521. Complex Organizations. (3:3:0) (G-SS) Prerequisite: consent of instructor.
Theoretical approaches and empirical studies of industries, military, university systems, hospitals, etc.

522. Social Stratification. (3:3:0) Prerequisite· Sociol. 111.
Status, class, and power systems in various societies.

525. Sociology of Religion. (2:2:0)
Influences of social factors in the development of various religious systems.

526. Sociology of Education. (2 2:0) (G-SS)
Social origins of goals and curricula; theories of change and control; and the nature of achievement in education.

552. Personality: Culture and Society. (3:3.0) Prerequisite: Sociol. 111 or Psych. 111.
The role of culture and society in the forming and functioning of personality. Compares various peoples and cultures.

555. (Sociol.-Psych.) Group Dynamics. (3.3·0) Prerequisite: Sociol.-Psych. 350.

560. (Sociol.-CDFR) Contemporary Theories about the Family. (3:3:0) Prerequisite· CDFR 460; consent of instructor.
Contemporary theories and research about the family, emphasizing role, exchange, and systems theories.

561. The Family Institution. (3:3:0)
The family in different societies; problems created by various family systems.

565. Sociology of Aging. (2·2·0)
Demographic and societal factors affecting aging Agencies serving older citizens and role of the community in resolving problems of the aged.

590R. Special Topics in Sociology. (1-3 1-3:0 ea.) (G-SS) Prerequisite consent of instructor.

595R. Directed Readings. (1-3·0 2-6 ea)

600. (Sociol.-CDFR) Advanced Research Methods. (3:3:0) Prerequisite: Sociol. 300 or consent of instructor

601. (Sociol.-CDFR) Seminar in Survey Research. (3:3:0) Prerequisites: Sociol. 300 or equivalent, graduate standing in sociology or allied discipline.
Survey research techniques of the behavioral sciences, emphasizing research and sampling designs.

602. (Sociol.-CDFR) Experimental Design in Sociology. (3:3:0) Prerequisites: Sociol. 300 or equivalent, graduate standing in sociology or allied discipline.

603R. (Sociol.-CDFR) Research Practicum. (3:1.8 ea) Prerequisites· Sociol. 606 and consent of instructor.

606. Intermediate Statistics. (3·3·0) Prerequisite. Sociol. 205.
Hypothesis testing and decision making for sociologists.

610. Seminar in Contemporary Sociological Theory. (3:3:0) Prerequisite Sociol. 411 and 412.
Structural-functionalism, conflict theory, general systems theory, exchange theory, and symbolic interactionism.

611. Seminar in Sociological Theory Building. (2:2:0) Prerequisite: Sociol. 610

612. Seminar in the Development of Sociological Theory. (3:3:0) Prerequisite: Sociol. 610.
Contributions of sociological theorists, including Durkheim, Weber, Pareto, and Simmel.

620. Theory and Research in Social Organization. (3:3:0) Prerequisite· admission to graduate sociology programs; others in graduate program by consent of instructor.
Graduate survey of the field of social organization and the core subfields therein

623. Seminar in Race and Ethnic Relations. (3 3.0)

630. (Sociol.-Psych.) Attitude Change. (3 3.0) Prerequisite graduate standing or consent of instructor
Theories of attitude development, change, and assessment, focusing on both individual and mass persuasion.

650. Advanced Social Psychology. (3·3:0) Prerequisite: admission to graduate sociology program; others in graduate program by consent of instructor

660. Familial Role Structure. (3 3·0) Prerequisite: Sociol.-CDFR 361
Characteristics and problems of family roles in various societies, emphasizing the United States

670. Contemporary Urban Social Structure. (3 3.0) Prerequisite. Sociol 370.
Research-oriented examination of social forces in contemporary urban life which influence patterns of human interaction

681R. Seminar in Deviance, Crime, and Corrections. (3:3:0 ea) Prerequisites Sociol. 111 and 381
Research and theory concerning criminal typologies A diagnostic course to complement Sociol. 582

692R. (Sociol.-CDFR) Seminar in Family Relationships. (1-2·1-2 0 ea)
The premarital dyad, the marital dyad, and issues in family interaction and familial roles

697R. Directed Research. (1-3:0:2-6 ea.)

699R. Master's Thesis. (Arr.)

700. Sociological Measurement. (3:3:0) Prerequisites: Sociol.-CDFR 600, Sociol. 606 and 706.
Unidimensional and multidimensional measurement techniques, emphasizing theoretical, methodological, and substantive consequences of technique selection.

706. Advanced Statistical Methods. (3:3:0) Prerequisite: Sociol. 606.
Factor, multivariate, and covariate analysis.

711. Sociological Theory and Theory Building. (3:3:0) Prerequisites: Sociol.-CDFR 600, Sociol. 606, 610, and 8 hours additional sociological theory.
Exploration of latest contributions to theory and current endeavors in the construction of sociological theories.

720R. Seminar: Social Organization. (1-3:1-3:0 ea.) Prerequisites: Sociol. 111 and 320.

750. Seminar: Social Psychology. (3:3:0) Prerequisites: Sociol.-Psych. 350 and consent of instructor.

792R. (Sociol.-CDFR) Seminar in Family Relations. (1-2:1-2:0 ea.)

799R. Doctoral Dissertation. (6-9:Arr.:Arr. ea.)

Social Work

Professor: Shumway.
Associate Professors: G. DeHoyos, E. Gibbons (Director, 142 FOB).
Assistant Professors: Nalder, Pearson.
Adjunct Professor: V. Brown, Jr.
Special Instructors: Burgoyne, Carroll, Christensen, K. Christiansen, Cowen, Dixon, Morris, Rowley, Solie, Terry, Timms, Williams.

The curriculum of the Social Work Program is designed to meet the following objectives:

1. Provide for immediate entry into employment at the bachelor degree level of social work practice.
2. Prepare students for graduate professional social work education and postgraduate effort.
3. Assist students for other graduate professional programs where the principles of social work practice are utilized.
4. Encourage social understanding and personal development in participation for the responsibilities of family life, church service, community leadership, and basic citizenship.
5. Equip students to move forward objectively, evaluate life realistically, and prepare them to be responsible change agents.
6. Recruit prospective social workers.
7. Strengthen the profession of social work.
8. Encourage cross-fertilization in behavioral disciplines.

Undergraduate Program

The undergraduate major in social work seeks to prepare students for immediate job placement in beginning-level positions in such agencies as family services, juvenile court, vocational rehabilitation, adult probation and parole, Bureau of Indian Affairs, Red Cross, child welfare, mental health, corrections, youth rehabilitation, Community Action, etc. A majority of the positions are available in county, state, and federal programs and are often subject to legislative selection and support. With the exception of private agencies, most positions are subject to and protected by Merit Entrance Examinations. The curriculum also leads to greater professionalization found in the training of graduate schools of social work and related disciplines.

Required Courses. Students in social work are required to take a prescribed combination of sociology and social work classes for a minimum total of 38 hours. In addition to Sociol. 112, 205, and 300, students majoring in social work are also required to take at least one race relations course. The social work core requirements are: SocWk. 360, 362, 364, 366, 460R, plus an additional 6 hours of social work electives. The electives must be selected from **social work courses** identified as SocWk. 390R and/or those with course listings from SocWk. 461 through 466. An approved field experience (SocWk. 460R) is required of all students in their junior or senior year. An absolute minimum of 300 hours of social service agency experience is necessary for graduation, with 5 semester hours of credit being issued for each 150 hours of field experience along with its weekly integrating seminar (SocWk. 460R). It therefore requires two full semesters of field experience to satisfy the requirement. Summer social service employment may qualify for credit; however, arrangements and approval must be obtained prior to the experience or no credit can be given. A social work major also requires an approved minor. Suggested minors are psychology and child development and family relationships. Other minors are accepted only through consultation with the student adviser.

Application to Major in Social Work. Students are admitted as majors only upon formal application and after an interview with one of the program faculty. Admission may be requested anytime after the third semester of a student's college work and upon the completion of SocWk. 360. Application must be made no later than eight weeks before the semester in which the student desires to enroll in SocWk. 460R. When a student is formally accepted as a major, his or her course sequence is then outlined for the entire program and a minor is approved. Without clearance, a student cannot register for the required field experience (460R).

Social Work Minor. Social work is not offered as a minor.

Social Work Courses

360. Introduction to the Field of Social Work. (3:3:0) Home Study also. (G-SS)
The institution of social welfare and the profession of social work.

362. Introduction to the Social Services: Individual. (4:3:2) (G-SS) Prerequisite: SocWk. 360 or consent of instructor.
Basic values, principles, and techniques used in social casework services.

364. Introduction to Social Services: Group. (3:3:0) (G-SS) Prerequisite: SocWk. 362 or consent of instructor.
Philosophy, principles, and dynamics of social group work.

366. Social Legislation. (3:3:0) (G-SS)
Process and impact of social legislation and law upon social services.

367. Social Services for the Aging. (2:2:0) Prerequisite: consent of instructor.
Process and impact of social services delivery systems upon the aged. Required for students on the Rocky Mountain Gerontology Center training program.

390R. Special Topics in Social Work. (3:3:0 ea.) (G-SS) Prerequisite: consent of instructor.
Course content varies from year to year on basis of current need.

460R. Field Experience in Social Work. (5:2:6 ea.) Prerequisites: SocWk. 360 and 362. For majors only.
Practical experience in social service agencies plus seminars to examine the relationship between theoretical concepts and practice.

461. Advanced Social Work Methods. (3:3:0) Prerequisite: consent of instructor.
Current social work practice theory; emphasizing micro-level intervention.

462. Communications Organization and Delivery Systems. (3:3:0) Prerequisite: consent of instructor.
Practice course; emphasizes macrolevel strategies of intervention, stresses theory, and role of social planners.

463. Child Welfare Services. (3:3:0) Prerequisite: consent of instructor.
Practice and theory of child protection, adoption, foster care, etc.

464. Intervention with Minority Clients. (3:3:0) Prerequisite: consent of instructor.
Specific factors affecting social work intervention with clients of ethnic and subcultural groups.

465. Therapeutic Communications. (3:0:3) Prerequisite: consent of instructor.
Experiential learning situations.

466. Systems Theory and Development Process. (3:3:0) Prerequisite: consent of instructor.
Current literature related to management of human services.

567. Social Services for the Aging. (3:3:0) Prerequisite: consent of instructor.
Process and impact of social service delivery systems upon the aged. Required for students on the Rocky Mountain Gerontology Center training program.

Statistics

Professors: Carter, Faulkner, Hilton (Chairman, 204 TMCB), Nielson, Rencher, Richards.
Associate Professors: Beus, Bryce, Christensen, Crandall, Hendrix.

Undergraduate Program

Objective decision making in the face of uncertainty is the challenge facing everyone in today's world. Utilizing such methods as the design and analysis of experiments, survey sampling, regression analysis, operations research, and probability theory, the statistician is able to make decisions that are useful to the social scientist, the biologist, the ecologist, the economist, and all people who collect data. Typical decisions might be the predicted outcomes of the upcoming election, the best combinations of treatments to increase yields (responses), a sampling scheme for incoming goods to locate bad lots, etc.

The curriculum in statistics is designed to (1) equip students with these kinds of decision-making skills for careers as professional statisticians in industrial organizations, government agencies, universities, and research institutes, and (2) to provide an integrated series of courses that will serve the entire University by providing technical tools which can be applied in many subject matter areas.

Statistics plays a key role in the field of actuarial science. An actuary is an executive professionally trained in the science of mathematical probabilities.

The actuarial profession requires a good mathematical aptitude, including thorough grounding in calculus, probability, and statistics. Economics, accounting, finance, business management, and liberal arts courses provide additional foundation for the broad perspective needed by a practicing actuary.

The bachelor's degree in statistics is offered in both the College of Physical and Mathematical Sciences and in the College of Business. The Master of Science degree in statistics is also offered, along with both an undergraduate and a graduate minor.

Requirements for a Major in the College of Physical and Mathematical Sciences

1. Stat. 221 (or 321 or 332), 336 (or 330), 337, 435 and 437 or 536, 520, 521, 522 or 541, 531 or 534, plus two additional classes from 432, 433, 434, 435, 437, 522, 531, 534, 536, 541.
2. Math. 110, 112, 113, 214, or equivalent. It is recommended that students who plan to do graduate work in statistics take Math. 315.
3. Twelve hours in an approved area, including ComSci. 131 or equivalent.

Requirements for a Major in Statistics in the College of Business

1. Stat. 221 (or 321), 330 (or 336), 337, 433, 435 and 437 or 536, 520, 521, 531 or 534, plus two additional classes from 432, 434, 436, 522, 531, 534, 536, 541.
2. Math. 110, 112, 113, 214, or equivalent.
3. Acctg. 201, 202, 242; BusMgt. 341, 301 or Econ. 353; ComSci. 131 or 133A,B; Econ. 110; Org Behav. 321.

Requirements for an Emphasis in Actuarial Science

1. Students may major in any of the following departments: Accounting, Business Management, Economics, Mathematics, Statistics.
2. Students are expected to complete the following courses: Acctg. 201, 202, 232A, 242; BusMgt. 301, 341; Econ. 110, 310, 311; Math. 112, 113, 214, Stat. 221 or equivalent, 433, 520, 521; 541 is recommended.

Requirements for a Minor in Statistics

A total of 14 hours, including Stat. 221 and 336 or their equivalent and three other courses numbered 337 or above.

Suggested Course Outline for Undergraduate Degree

Since many students do not become acquainted with statistics until after they enter the University, the following programs show how a major in statistics can be obtained by starting at the beginning of the freshman, sophomore, or junior year. Those few students who may desire to enter the program as seniors should consult the department. Each of these schedules assume an appropriate background in mathematics. Other courses may be substituted for some of the courses below, depending on the needs and interests of the individual student.

Freshman Entry

First year: 221
Second year: 336, 337.
Third year: 433, 434, 520, 521, 522.
Fourth year: 531, 536, 541

Sophomore Entry

Second year: 221, 330, 337.
Third year: 520, 521, 433, 434
Fourth year: 435, 437, 522, 531

Junior Entry

Third year: 221, 330, 337, 520, 521, 522.
Fourth year 432, 434, 534, 536

Graduate Program

Program. Master of Science (M.S.).

Entrance Examination Required. None, although foreign students may be required to take an English placement examination.

Application Consideration Dates. Fall Semester, June 30; Winter Semester, November 15, Spring or Summer Terms, March 10. If application is also made for financial assistance, all forms should be received three months prior to each of the above deadlines.

Entry Times. Fall Semester recommended or Spring Term if Stat. 501 (or equivalent) has not been completed.

Master of Science

Prerequisites. Stat. 501, Math. 315, and ComSci. 131 or their equivalents.

Fields. Applied or theoretical statistics.

Minors Permissible. Option 1 or 2.

Requirements. Minimum of 24 semester hours plus thesis (6-hr. min.—699R). Students must pass a written examination over the material covered in Stat. 501, part of 502, 520, and 521, before beginning their thesis research.

Required Courses. Stat. 636; 2 hours of Stat. 591R; one course from Stat. 611, 621, 631, 632, 690R; all of the following courses unless taken as an undergraduate: Stat. 520, 521, 522, 531 (or 534). Foreign students may be required to take ESL 101 or 102, depending on the outcome of an interview with the department after their arrival at Brigham Young University

This program is designed to prepare students for (1) work in industry or government or (2) Ph.D. work in statistics.

Minor Programs

Master's Level. Nine hours in any statistics course numbered 300 and above (except 552), plus a written examination over material covered in Stat. 501 and part of Stat. 502.

Ph.D. Level. Stat. 520 and 521, plus 9 additional hours from statistics courses numbered 433 and above (except 501, 552, and 554), plus a written examination over material covered in Stat. 501, part of 502, 520, and 521.

Courses

221. Principles of Statistics 1. (3:3:0) Home Study also. (G-PS, ML) Prerequisite: Math. 110A,B, and C or Math. 105 or equivalent.

Frequency distributions, elementary probability, estimation and inference about means and variances, contingency tables, regression, and correlation.

222. Principles of Statistics 2. (4:4:0) Prerequisite: Math. 105 or equivalent or Math. 110 A,B,C.

Frequency distributions, elementary probability, estimation and inference about means and variances, contingency tables, correlation, analysis of variance, multiple regression.

223. Principles of Statistics 3. (1:1:0) Prerequisite: Math. 105 or 110A,B,C, or equivalent; Stat. 221 or equivalent.

Introduction to analysis of variance and multiple regression.

241. Elementary Probability. (2:2:0) Home Study also. (G-ML) Prerequisite: Math. 105 or 110A,B, and C or equivalent.

Combinations: permutations; binomial, Poisson, multinominal, and hypergeometric distributions; combinatorial probability.

321. Elements of Mathematical Statistics. (3:0:0) (G-ML) Prerequisite: Math. 112 or equivalent.

Probability, random variables, frequency distributions, estimation and tests of hypotheses from a theoretical standpoint. For nonstatistics majors.

330. Statistical Methods Used in Business. (3:3:0) (G-ML) Prerequisite: Stat. 221 or 332 or equivalent.

Time series, forecasting, multiple regression and correlation, index numbers, sample survey methods, Bayesian decision theory, and quality control.

332. Statistical Methods Used in Engineering. (2:2:0) (G-ML) Prerequisite: Math. 214 or equivalent

Same topics as Stat. 221; uses calculus and stresses methods.

334. Methods of Survey Sampling. (3:3:0) Prerequisite: Stat. 221.

Sampling frames, questionnaire design; simple random, systematic, stratified, cluster, and PPS sampling methods, comparing domain means, contingency table analysis.

336. Statistical Methods Used in the Sciences 1. (3:3:0) (G-ML) Prerequisite: Stat. 221 or 332 or equivalent.

Estimation and tests of hypotheses, sampling, multiple regression,. and partial correlation.

337. Statistical Methods Used in the Sciences 2. (3:3:0) (G-ML) Prerequisite: Stat. 330 or 336.

Analysis of variance and covariance, multiple coveriance, introduction to experimental design and the analysis of unbalanced data for the fixed model.

432. Quality Control and Industrial Statistics. (3:3:0) (G-ML) Prerequisite: Stat. 221 or 332. Recommended: Stat. 330 and 336.

Acceptance sampling, rectifying inspection, and control charts.

433. Operations Research 1. (3:3:0) (G-ML) Prerequisites: Math. 119 or 112; Stat. 221.

Methods of linear and dynamic programming. Inventory and replacement models, queuing theory, game theory, and PERT and CPM and simulation.

434. Operations Research 2. (3:3:0) (G-ML) Prerequisites: Math. 119 or 112; Stat. 221.

Theory underlying methods presented in Stat. 433; integer and nonlinear programming. Related topics.

435. Nonparametric Statistical Methods. (2:2:0) Prerequisite: Stat. 221 or 501 or equivalent.

Nonparametric analogues of classical parametric methods, use of ranks; binomial tests, two-way contingency tables, Kolmogorov-Smirov tests.

437. Categorical Data Analysis. (2:2:0) Prerequisita: Stat. 337 or 554 or equivalent.

Analysis of multi-way contingency tables with linear and log-linear models using maximum likelihood and minimum modified chi-square estimates as appropriate.

497R. Introduction to Statistical Research. (1-3:0:6 ea.) Prerequisite: consent of department chairman.

Review of current literature and survey of present status of significant statistical research, collaborative work between student and faculty.

501. Statistics for Research Workers 1. (5:4:3) Prerequisite: Math. 105 or equivalent.

Probability, estimation, tests of hypotheses, regression, analysis of variance, and nonparametric methods. For natural or social science students.

502. Statistics for Research Workers 2. (5:4:3) Prerequisite: Stat. 501 or equivalent.

Analysis of covariance, multiple regression, linear models, design of experiments, and sampling. For natural or social science students.

520, 521. Theory of Statistics 1, 2. (3:3:0 ea.) Prerequisite: Math. 214 or equivalent.

Development of the theory of discrete and continuous distribution functions, including derived sampling distributions; tests of hypotheses and point and interval estimation.

522. Theory of Linear Models. (4:4:0) Prerequisite: Stat. 521.

Linear hypotheses, with application to regression and design.

531. Experimental Design. (3:3:0) Prerequisite: Stat. 337 or 501.

Randomized blocks, Latin squares, factorial designs, fractional replication, confounding, and incomplete blocks.

532. Statistics for Scientists. (1-4:Arr.:0) Prerequisite: Math. 214.

Probability and frequency distributions, estimation, hypothesis testing, linear regression, analysis of variance, multiple linear regression, polynomial regression, generalizations. With examples from physical science and engineering.

534. Sampling. (3:3:0) Prerequisite: Stat. 337 or equivalent.

Systematic, simple random, stratified, and cluster sampling; optimum allocation; ratio estimation; etc. Applications to various fields.

536. Regression Analysis. (3:3:0) Prerequisites: Stat. 336 and 501.
Multiple regression, introduction to model building and nonlinear estimation, examination of residuals, stepwise regression, and Hocking-Leslie algorithm.

541. Advanced Probability. (3:3:0) Prerequisite: Math. 214. Recommended: completion of or concurrent registration in Stat. 521.
Advanced combinatorial methods, random walk, Markov chains, and stochastic processes.

552. Statistical Methods in Education 1. (3:3:0) Prerequisite: consent of instructor.
Measures of central tendency, variability; correlations; introduction to probability and statistical inference. Computer usage stressed. For majors in education and related fields.

554. Statistical Methods in Education 2. (3:3:0) Prerequisite: Stat. 552.
Educational computer applications of analysis of variance and covariance, multiple and partial regression and correlation, nonparametric methods. Introduction to experimental design.

591R. Graduate Seminar in Statistics. (1:1:0 ea.)

599R. Cooperative Education: Statistics. (Arr.:0:0 ea.) Prerequisite: consent of department coordinator. Students must meet departmental requirements and consult advisor prior to registration.
On-the-job experience. Report required.

611. Multivariate Statistical Methods. (3:3:0) Prerequisite: Stat. 337 or 502.
Inference about mean vectors and covariance matrices; multivariate analysis of variance and regression; canonical correlation; discriminant analysis; principal component analysis; factor analysis.

621. Advanced Theory of Statistics. (3:3:0) Prerequisites: Math. 315; Stat. 521. Recommended: Stat. 522.
Theory of estimation, testing hypotheses, multiple regression, and multivariate analysis.

631. Advanced Experimental Design. (3:3:0) Prerequisites: Stat. 521, 531. Recommended: Stat. 522.
Offered 1979 and alternate years.

632. Advanced Industrial Statistics and Reliability. (3:3:0) Prerequisite: Stat. 532, 521, or equivalent.
Sequential sampling, tolerance limits, life testing, and reliability.

636. Advanced Statistical Methods. (3:3:0) Prerequisites: Stat. 337 and 502 or 521.
Analysis of variance with unequal subclass frequencies, including missing cells; analysis of covariance; orthogonal polynomials; multiple comparisons and related topics.

690R. Special Topics in Statistics. (3:3:0 ea.) Prerequisite: consent of instructor.

695. Reading in Statistics. (1-2:2:0) Prerequisite: consent of department.

699R. Master's Thesis. (6-9:Arr.:Arr. ea.) Prerequisite: consent of department.

Technology

Professors: Allen, McArthur (Chairman, 435 CB), Mortensen, Wilkes.
Associate Professors: Brown, Holt, Simmons, Smart, Tolman.
Assistant Professors: Kohkonen, Kunzler, Long, Mather, Raisor, Wallace, Whited.
Instructors: Newitt, Veenker

Undergraduate Program

The Technology Department offers baccalaureate degrees in engineering technology (design and graphics, electronics, manufacturing) and in industrial technology (building construction and physical plant administration). Associate-degree technician programs are offered in drafting, electronics, electricity, graphic art, light building construction, material, science, and welding.

Two different types of courses are offered to meet the needs of two distinct groups of students: (1) introductory courses for those students desiring a greater understanding of the industrial and technical activity in the world today; and (2) technical courses for those students who wish to prepare for industrial and technical occupations.

These programs are designed to develop successful and productive citizens with a constructive philosophy of life. To receive a maximum benefit in minimum time, students should contact the department chairman and be assigned an adviser who will assist them in working out a program of studies.

Engineering Technology Design and Graphics

Supervisor: Doran Wilkes

The design and graphics technology program, which leads to the Bachelor of Science degree, is accredited by the Engineers' Council for Professional Development (ECPD) and fully certified by the American Institute for Design and Drafting (AIDD).
Students in design and graphics technology are exposed to the broad spectrum of engineering design and become proficient in the graphic skills related to that discipline. Through relevent "hands-on" experience, they are also prepared for various positions in the expanding field of automated graphics and computer-aided design techniques.

Specialization

The four-year degree in design and graphics offers a core program with the opportunity to specialize through taking required technical elective courses. Areas suggested for specialization are manufacturing, building construction, management, and computer programming.

Graduation Requirements

Students should understand that general education requirements (including religion) are in addition to the course requirements shown in the typical program. Students are urged to obtain a complete integrated course program from their department office.

Students must complete the core program and four courses of technical electives selected in consultation with their adviser. A minimum grade-point average of 2.0 is required for graduation. A grade of D or lower in the core courses is not acceptable.

High School Preparation

Credit for drafting in high school may be given in lieu of taking DesTech. 111. The student should register for DesTech. 111 and take an examination, which can permit credit for skills learned in high school. High school drafting, mathematics, chemistry, physics, and industrial shop classes will all be helpful in the program.

Transfer Credit

The student's adviser or program supervisor should be contacted concerning transfer credit. Normally, equivalent work at other schools can be substituted for either core classes or technical electives.

Graduate Study

Opportunity for education beyond the bachelor's degree is offered through (1) the Master of Science degree program in computer-aided manufacturing, (2) a technical teacher option of the Industrial Education Department for those who wish to go into postsecondary education, and (3) an MBA degree offered through the Graduate School of Management.

For students wishing to complete the program in four years, the following sequence of courses is suggested:

First Year	F	W
ElecTech. 100		1
DesTech. 111, 211	3	3
ArtDs. 109		2
MfgTech. 131	3	
Math. 121, 122	3	3
DesTech. 291R	0	0

Second Year	F	W
MfgTech. 132	2	
MfgTech. 336		3
ElecTech. 242		3
Math. 223	3	
Physics 105, 106	3	3
DesTech. 212	3	
DesTech. 291R	0	0

Third Year	F	W
DesTech. 316, 333	4	4
MfgTech. 335, 345	4	3
DesTech. 310	4	
DesTech. 291R	0	0
ComSci. 131		3

Fourth Year	F	W
DesTech. 435, 537		6
DesTech. 434, 436	6	
MfgTech. 491R		1
Technical electives**	6	6
Econ. 110	3	

**Selected in consultation with your adviser.

For students wishing to complete the program in three years, the following sequence of courses is suggested:

First Year	F	W	Sp/S
DesTech. 111, 211, 212	3	3	3
ArtDs. 109			2
MfgTech. 131	3		
ElecTech. 100	1		
Math. 121, 122, 223	3	3	3
Physics 105, 106		3	3
DesTech. 291R		0	

Second Year	F	W	Sp/S
DesTech 310	4		
DesTech. 316		4	
ComSci. 131		3	
MfgTech. 132	2		
MfgTech. 335, 336	3		4
Econ. 110	3		
ElecTech. 242			3
Depth electives		3	3
DesTech. 291R	0	0	

Third Year	F	W	Sp/S
DesTech. 434, 435		3	3
DesTech. 333, 436, 537	4	3	3
MfgTech. 491R		1	
MfgTech. 345	3		
Depth electives	3		3

Drafting Technician

Adviser: Doran Wilkes

The following associate-degree drafting technician program is offered for those students who do not desire to complete a four-year curriculum. Courses taken in this area are counted toward the baccalaureate degree in design and graphics.

Architectural and mechanical drafting technicians graduating from this program are generally in demand in all areas of scientific research and engineering development. Employment opportunities are available in industry, in architects' offices, and in governmental agencies.

First Year	F	W
DesTech. 111, 211, 212	3	6
ElecTech. 100	1	
Math. 121, 122	3	3
DesTech. 291R	0	0

Second Year (Mechanical Drafting Option)	F	W
DesTech. 310, 410	4	2
DesTech. 311, 355	2	3
ElecTech. 242		3
Math. 223	3	
Physics 105, 106	3	3
Econ. 110		3
DesTech. 291R	0	0

Second Year (Architectural Drafting Option—Not Prearchitecture)	F	W
DesTech. 355, 356	3	3
DesTech. 256		3
Indus. 100	3	
BldgTech. 218, 341	2	2
CivEng. 211		2
Physics 105	3	
Econ. 110	3	
DesTech. 291R	0	0

Design Technology Courses

104. Drafting for Interior Environment. (2:1:1)
Fundamentals of architectural drafting and blueprint reading. Primarily for interior environment majors.

111. Introduction to Engineering Graphics. (2-3:3:0) Home Study also.
Fundamentals of the graphic language, including geometric construction, orthographic projection, auxiliary views, sectioning, basic dimensioning, and isometric views, emphasizing sketching.

211. Advanced Mechanical Drafting. (3:3:1) Home Study also. Prerequisite: DesTech. 111.
Techniques of working drawings, precision dimensioning, simplified drafting, SAE, and aerospace drafting standards, drafting-room practices, and automated graphics.

212. Engineering Graphics and Descriptive Geometry. (2-3:3:0) Prerequisite: DesTech. 111 or consent of instructor.
Principles of descriptive geometry, including graphical statics and mathematics sliding scales, and nomography.

256. Rendering and Perspective. (3:1:5)
Methods and procedures involved in rendering and drawing one-, two-, and three-point perspectives.

291R. Undergraduate Seminar. (0:½:0 ea.)
Required of all undergraduate technology students except those registered for 491R.

310. Professional Graphic Applications. (4:4:0) Prerequisite: DesTech. 211.
Engineering graphics, including architecture, aircraft, technical illustration, checking procedures, topography, and electronics.

311. Aeronautical Drafting. (2:2:1) Prerequisite: DesTech. 310.
Aircraft surface development, lofting theory and application of aircraft coordinate systems, and matrix manipulation. Aircraft drafting room manuals and design handbooks.

316. Applied Mechanics. (4:3:2) Prerequisites: Math. 223; Physics 105.
Introduction to statics and strength of materials. Equations of equilibrium, principles of structures, and stresses in bending and torsion.

333. Applied Dynamics and Kinematics. (4:4:0) Prerequisites: DesTech. 316, Math. 223.
Graphical and analytical study of velocity and acceleration problems using Newton's laws of motion.

355. Residential Drafting and Planning. (3:2:4) Home Study also.
Residential drafting techniques correlated with efficient house planning. Includes perspectives, plot plan, footing, foundation, floor plans, elevations, framing, sections, and electrical and mechanical installations.

356. Commercial Structure Drafting. (3:2:3) Prerequisite: DesTech. 355.
Students develop the working drawings for building.

399R. Cooperative Education: Design Technology. (1-6:0:0 ea.) Prerequisite: consent of department and college coordinators.
On-the-job experience. Report required. Maximum of 6 credit hours.

410. Technical Illustration. (2:2:2) Home Study also. Prerequisite: DesTech. 310.
Advanced techniques in axonometric drawing, adapted grids, overlays, projection methodology, perspectives, and rendering, emphasizing current industrial trends in project-illustration techniques.

434. Elements of Machines 1. (3:2:3) Prerequisites: DesTech. 316; Math. 223.
Design, emphasizing stress analysis, combined stresses, and design of machine elements.

435. Elements of Machines 2. (3:1:0) Prerequisites: DesTech. 333, 434; ElecTech. 242; MfgTech. 336; completion of or concurrent registration in ArtDs. 109.
For advanced students. Completion of individual project and design, using electronic, pneumatic, hydraulic, and mechanical components.

436. Basic Computer-assisted Part Programming. (3:3:0) Home Study also.
Part programming emphasizing the APT language.

491R. Senior Seminar. (1:1:0 ea.)

493R. Special Problems in Drafting. (1-3:Arr.:Arr. ea.) Prerequisite: consent of instructor.

537. Computer-aided Drafting. (3:2:2) Prerequisite: DesTech. 436.
Techniques, programming, and operation of automated and computer-graphic equipment, including scaling, rotation of view, developments, isometrics, sectioning, information retrieval, and problem solving.

Electronics Technology

Program Supervisor: Merrill J. Smart.

This program is fully accredited by the Engineers' Council for Professional Development. It provides training at the technician (two-year) level and at the professional (four-year) level in communications, digital electronics, circuit analysis, instrumentation, and real-time programming. This is accomplished through the use of the excellent departmental facilities, which include some of the latest electronic equipment, computer facilities (a real-time computer laboratory and a time-shared computer system), and recording and broadcasting equipment.

Graduates of this program have found positions in a wide variety of industries, including ship building, medical electronics, chemical process control, research laboratories, and the aerospace industries. Graduates are prepared to become responsible members of the technical team at the professional level or as advanced technicians, where electronic equipment is developed, manufactured, maintained, and applied to the needs of the industry. The graduate also has special strength in the areas of system maintenance, computer interface design, and real-time programming.

Degrees Granted

Electronics technology provides the four-year baccalaureate degree program. It also offers the two-year associate degree electronics technician and electrical technician program.

Specialization

The four-year baccalaureate program provides three areas of specialization: (1) minicomputer applications (emphasizing real-time programming and software requirements), (2) minicomputer applications (emphasizing hardware requirements and electronic interfacing), and (3) communications (consumer and industrial).

Graduation Requirements

Students should understand that general education requirements (including religion) are in addition to the course requirements shown in the typical program. Students are urged to obtain a complete integrated course program from their department office.

In addition to the common core requirements listed, the student must complete one of three approved specialization areas. Technical electives in each of these areas are selected through consultation between student and adviser. A minimum grade-point average of 2.0 must be maintained, and grades of C- or higher are required in all major area classes for graduation.

Cooperative Education.

The Cooperative Education Program (Co-op) is a work-study program in which students integrate their major course of study with industrial work experience. Qualified students (those who have received prior approval) enroll in ElecTech. 399R, and can receive a maximum of 6 hours of technical elective credit.

High School Preparation.

Recommended high school courses include physics and algebra. Course work in electronics, electricity, chemistry, and drafting is also desirable.

Transfer Credit.

Students transferring into electronics must meet with an assigned adviser prior to registration for evaluation of technical courses after credit has been granted by the University for those courses. Students receive assistance from their adviser (by appointment) prior to registration or at other times when needed.

Graduate Study

Opportunity for education beyond the bachelor's degree is offered through (1) the Master of Science degree program in computer-aided manufacturing, (2) the Industrial Education Department (technical teacher option for those who wish to go into postsecondary education), (3) the Graduate School of Management (MBA degree), (4) the Computer Science Department (students contemplating this should seek consultation with an advisar as soon as possible), and (5) the Electrical Engineering Department (students who anticipate this should seek consultation with an adviser early in their program).

First Year	**F**	**W**
ElecTech. 100, 231	1	4
ElecTech. 102, 103	3	4
Math. 121, 122	3	3
Physics 105		3
DesTech. 291R	0	0

Second Year	**F**	**W**
ElecTech. 232, 245	4	3
ElecTech. 235, 228	3	3
ElecTech. 340, 234	3	2
Math. 223, ElecTech. 342	3	3
DesTech. 291R	0	0

Digital Systems and Minicomputer Specialization

Third Year	**F**	**W**
ElecTech. 343, 440	3	3
ElecTech. 321, 422	3	3
Math. 224		3
ComSci. 132, technical elective	3	3
DesTech. 291R	0	0

Fourth Year	**F**	**W**
ElecTech. 441, 442	3	3
MfgTech. 491R	1	
ComSci. 300 or 351	3	
Electronics technology electives	3	3

Communications Specialization

Third Year	**F**	**W**
ElecTech. 321, 442	3	3
ElecTech. 343, 443	3	3
ElecTech. 345, 346	3	3

	F	W
DesTech. 291R	0	0
Technical electives	2	2
	11	11

Fourth Year	F	W
ElecTech. 492R		3
Technical electives	6	6
MfgTech. 491R	1	
Engl. 316	3	
	10	9

Compressed Three-Year Sequence of Courses for Digital Systems and Minicomputer Program

First Year	F	W	Sp	Su
ElecTech. 100, 103, 235	1	4		3
ElecTech 102, 231	3	4		
Math. 121, 122, 223	3	3	3	
Physics 105		3		
DesTech. 291R	0	0		

Second Year	F	W	Sp	Su
ElecTech. 342, 228	3	3		
ElecTech. 340, 440	3	3		
ElecTech. 321, 422	3	3		
ElecTech. 232, ComSci. 132	4	3		
Electronics technology electives			3	3
DesTech. 291R	0	0		

Third Year	F	W
ElecTech. 234		2
ElecTech. 441, 442	3	3
ElecTech. 343, 245	3	3
Math. 224		3
ComSci. 300 or 351		3
MfgTech. 491R	1	
Electronics technology elective	3	

Electrical Technician

Adviser: C. Robert Whited

Electrical technicians are prepared to assist electrical engineers with the more detailed work of their profession. They work as electrical power technicians in power plant operation, power transmission, and distribution; manufacturing of electrical machinery; design and construction of commercial and industrial power systems; and electrical inspecting, estimating, and drafting. They find employment with electrical power generating and distributing companies, telephone companies, government installations, defense plants, and business and industrial concerns. The following associate degree program, in addition to the requirements listed in the general education programs sections, provides students with a maximum of practical training to effectively fill the position of electrical technician:

First Year	F	W
ElecTech. 100	1	
ElecTech. 102, 103	3	4
Physics 105		3
Math. 121, 122	3	3
DesTech. 291R	0	0

Second Year	F	W
ElecTech. 321, 340	3	3
BldgTech. 341, ElecTech. 228	2	3
ElecTech. 231, 232	4	4
MfgTech. 131	3	
Math. 223	3	
DesTech. 291R	0	0

Electronics Technician

(Accredited by the Engineers' Council for Professional Development)

Adviser: Merrill J. Smart

Electronics engineering technicians are prepared to assist engineers with practical and detailed work in communications, computers, instrumentation, medical equipment, and industrial process controls. This associate degree program includes the study of electronic theory and circuits, involving electron tubes, transistors, and servomechanisms. It is designed to give basic technical training necessary to place the student in the role of a successful electronics engineering technician.

Upon completion of this program, students might find it profitable to transfer to a four-year baccalaureate degree program in electronics technology or in technical teacher education (see Industrial Education section of this catalog).

First Year	F	W
ElecTech. 100, 231	1	4
ElecTech. 102, 103	3	4
Math. 121, 122	3	3
Physics 105		3
DesTech. 291R	0	0

Second Year	F	W
ElecTech. 232, 245	4	3
ElecTech. 232, 234	3	2
ElecTech. 342, 228	3	3
Math. 223, ElecTech. 340	3	3
DesTech. 291R	0	0

Electronics Technology Courses

100. Orientation in Technology. (1:1:0)
For all technology majors. Adjusting to college, foundations of technology, selection and use of hand calculators, basic principles of minicomputers, and introduction to metrics.

102. DC Circuits. (3:2:3) Prerequisite: concurrent registration in Math. 121.
Basic theory, including electrical fundamentals, Ohm's law, loop and nodal equations, and network theorems.

103. AC Circuits. (4:3:3) Prerequisites: ElecTech. 102 and concurrent registration in Math. 122.
Basic AC and transient circuit analysis, including impedence, reactance, resonance, time constants, AC network analysis, magnetic circuits, and transformers.

228. Electronic Prototype Fabrication. (3:2:3) Prerequisite: ElecTech. 232.
Individualized design and production of an electrical prototype and its technical manual. Includes production drawings, trouble shooting, breadboard work, sheet metal and printed circuit fabrication.

231. Electronics 1. (4:3:3) Prerequisites: ElecTech. 102 and concurrent registration in ElecTech. 103 and Math. 121.
Transistor and vacuum tube principles, including semiconductor theory, device characteristics and parameters, basic circuit configurations, and device biasing.

232. Electronics 2. (4:3:3) Prerequisites: ElecTech. 103, 231; concurrent registration in Math. 223.
Application of linear active devices and integrated circuits in audio, wideband, and power amplifiers; oscillators; power supplies; and regulators.

234. Electrical Trouble Shooting. (2:1:3) Prerequisites: ElecTech. 232, 245.
Maintenance and service of electronic equipment; trouble-shooting techniques; using electrical measuring and testing devices.

235. Electronics 3. (3:2:3) Prerequisite: ElecTech. 231.
Advanced electronics, covering pulse and switching circuits, integrated circuits, Boolean algebra, and combinational logic principles.

242. Electrical Machines and Controls. (3:2:2) Prerequisites: Math. 121; Physics 106 or Indus. 101.
Introduction to industrial electrical circuits, electrical machines, and controls.

245. Communication Circuits. (3:2:3) Prerequisite: ElecTech. 232.
Information transmission: basic theory and applications, transmitters, transmission lines and receivers,

audio and radio frequencies, amplitude and frequency modulation and demodulation, and circuits and techniques

321. Electrical Control Systems. (3:2:3) Prerequisites ElecTech. 232, 235 and Physics 105.
Feedback theory, emphasizing the study of second-order linear systems.

340. Introductory Minicomputer Applications. (3:2:2) Prerequisites: ElecTech. 103, 231.
Minicomputers and PDP-8 assembly language, with applications in electronics circuit solutions using BASIC, FOCAL, and COLPAC.

342. Digital Electronics 1. (3:2:3) Prerequisite: ElecTech. 235.
Sequential circuits, state machine and system controller design and applications, logic families, documentation, and terminology

343. Digital Electronics 2. (3:2:3) Prerequisite ElecTech. 342.
Fundamentals of digital computers, microprocessor applications, digital system interface design, and converting design requirements to hardware.

344. Electronic Instrumentation. (3:2:3) Prerequisites ElecTech. 232, 342.
Design and application of basic instrumentation to automated manufacturing and control processes.

345. Communication Systems 1. (3:2:3) Prerequisite ElecTech. 245.
Systems principles, multistage analysis and testing techniques, microwave propagation, antennas, AM/FM integrated circuits; student projects.

346. Communication Systems 2. (3:2:3) Prerequisite ElecTech. 345.
Commercial audio and video components, circuits, and systems basic theory; operation and testing for commercial, education, and industrial application; transducers, recording, broadcasting, and FCC regulations

399R. Cooperative Education: Electronics Technology. (1-6:0:0 ea.) Prerequisite: consent of department and college coordinators.
On-the-job experience. Report required Maximum of 6 credit hours applicable toward technical electives

422. Linear Integrated Circuits. (3:2:3) Prerequisite ElecTech. 321.
Modern linear IC's including timers, comparators, voltage regulators, operational amplifiers, etc

440. Process Control Computers. (3:2:2) Prerequisites: ElecTech. 340.
Instruction sets, assembly languages, and system programming features of small, general-purpose computers used in industrial process control environments.

441. Real-Time Computer Systems 1. (3:2:2) Prerequisites: ElecTech. 342 and 440.
Real-time operating systems, using RSX-11/M to illustrate system concepts in multitask real-time operating environments.

442. Real-Time Computer Systems 2. (3:2:2) Prerequisites: ElecTech. 342 and 440.
Advanced features of real-time operating systems integrated into a class project which applies these principles to a programming project of significant size

443. Data Transmission. (3:2:2) Prerequisites: ElecTech. 440, 342
Interfacing computers to transmission media, characteristics of transmission media, coding and error control, commercial communication channels and services, switching and network concepts

492R. Special Problems in Electronics Technology. (1-3:Arr.:Arr. ea.) Prerequisite consent of instructor
Individual study in research or design related to electronics or real-time programming

Manufacturing Technology

Program Supervisor, John J. Kunzler

This four-year baccalaureate degree program is fully accredited by the Engineers' Council for Professional Development (ECPD) and prepares graduates for professional employment in industry's technical and managerial positions The curriculum is designed to meet individual student needs through common core courses and technical concentrations Employment projections indicate an increasing demand for graduates technically competent in the manufacturing discipline, many of whom are moving into increasingly responsible managerial positions Manufacturing has long been the basis of the American economy, and graduates from this area are uniquely educated and trained for assuming positions that will increase the productivity and efficiency of the manufacturing enterprise

The BYU manufacturing curriculum is nationally recognized as a leader in its field Excellent equipment and facilities are available for basic and advanced manufacturing processes, destructive and nondestructive testing, compositional and X-ray analysis of materials, computer process control, and instrumentation for process evaluation and applied research.

Specializations. In addition to completing the basic core courses in manufacturing technology, students are expected to choose a depth sequence of courses in an area of interest to increase their proficiency in that area Concentrations and suggested courses are—

Manufacturing Systems DesTech. 436, MfgTech. 337, 380, 433, 490R, 495R
Management. Acctg 201, BusMgt 361, OrgB 321, 425
Welding MfgTech. 126, 226, 227, 425, 490R
Design. DesTech. 333, 434, 435, 493R

Graduation Requirements

Students should understand that general education requirements (including religion) are in addition to the course requirements shown in the typical program. Students are urged to obtain a complete integrated course program from their department office.

In addition to common core requirements, students must complete an approved 12-credit-hour sequence of technical electives, selected in consultation with their adviser Cooperative industrial experience in the major field prior to graduation is strongly encouraged. A minimum grade-point average of 2.0 must be maintained for graduation. Grades of D or lower will not be acceptable for courses in the major field

Cooperative Education: This is an option leading to a superior education in the cooperative education program Qualified students may enroll in MfgTech 399R, Manufacturing Practicum, and receive 3 hours of credit for each 500 hours of industrial experience with a cooperating company. The co-op program must be approved prior to the actual experience A formal report is required

High School Preparation: Recommended courses for high school include drafting, machine shop, and algebra Course work in physics, chemistry, and woodworking are desirable

Transfer Credit: Students transferring into manufacturing technology are to meet with an assigned adviser for evaluation of technical courses, preferably before registration Students may ask that their adviser help them make a complete schedule of all remaining courses, semester by semester

Graduate Study: Opportunity for education beyond the bachelor's degree is offered through (1) the Master of Science degree program in computer-aided manufacturing, (2) a technical teacher option of the Industrial Education Department for those who wish to go into postsecondary education, and (3) an MBA degree offered through the Graduate School of Management

Sequence of Courses: The following schedule shows the sequence of required and recommended technical courses. The student may begin by enrolling in any of the 100-level courses. Technical electives or manufacturing practicum courses are usually taken after the student has achieved junior standing in the program.

First Year	F	W
MfgTech. 131, 124	3	3
MfgTech. 132	2	
DesTech. 211		3
Math. 121, 122	3	
ElecTech. 100	1	
DesTech. 291R	0	0

Second Year	F	W
MfgTech. 335, 230	4	3
MfgTech. 431	3	
Math. 223	3	
MfgTech. 229		3
Physics 105, 106	3	3
Econ. 110		3
DesTech. 291R	0	0

Third Year	F	W
MfgTech. 338, 336	3	3
MfgTech. 332, 225	3	3
MfgTech. 360		3
MfgTech. 345	3	
ElecTech. 242		3
DesTech. 291R	0	0

Fourth Year	F	W
MfgTech. 331		3
MfgTech. 399R or 498R		3
DesTech. 316	4	
MfgTech. 430	3	
ComSci. 131, MfgTech. 491R	3	1
Technical electives*	3	9

Three-Year Curriculum: Under the new 4-4-2-2 calendar, the student may complete the program in three years. For those who desire to do so, the following sequence of courses is suggested.

First Year	F	W	Sp/Su
MfgTech. 131, 230, 124	3	3	3
MfgTech. 132	2		
DesTech. 211			3
Physics 105, 106		3	3
Math. 121, 122, 223	3	3	3
ElecTech. 100	1		
Econ. 110		3	

Second Year	F	W	Sp/Su
MfgTech. 431, 225, 331	3	3	3
MfgTech. 335, 360, 336	4	3	3
Technical electives*	2	4	
MfgTech. 229	3		
ElecTech. 242		3	

Third Year	F	W	Sp/Su
MfgTech. 338, 345, 430	3	3	3
MfgTech. 332, 491R	3	1	
MfgTech. 399R, or 498R			2
Technical electives*		3	6
DesTech. 316		4	
ComSci. 131	3		

***Technical Electives:** Students, in consultation with their advisers, may select a series of upper-division or graduate classes in such areas as manufacturing, welding, design, management, or the integrated master's program in preparation for graduate work.

Materials Science Technician

Supervisor: K. S. Mortensen

This associate-degree program trains the student to easily adapt to a position in the industrial laboratory. The areas of training include nondestructive testing, quality control, chemical technology, materials testing and analysis, foundry, welding, drafting, technical writing, metallurgy, material science, and spectroscopy. Graduates are employed as qualified laboratory technicians in the testing laboratories maintained in almost every major industry. The courses taken in this program may be counted in the four-year manufacturing program.

First Year	F	W
MfgTech. 335		4
ElecTech. 100	1	
DesTech. 291R	0	0
Math. 121, 122	3	3
Chem. 100	3	
Physics 105		3
DesTech. 111	3	

Second Year	F	W
MfgTech. 124, 225	3	3
MfgTech. 131, 265	3	2
MfgTech. 132	2	
Technical electives		3
ComSci. 131	3	
MfgTech. 345		3
DesTech. 291R	0	0

Welding Technician

Program Supervisor: Lester Long

This program offers comprehensive training for the preparation of welding technicians for industry. It consists of theory and practice in oxy-acetylene, electric arc, resistance, Heliarc, and submerged arc welding. In addition, the program provides training in machine tool processes, metallurgy, technical drawing, and related general education.

With the emphasis on prefabrication, and with the rapid changes occurring in industry, welding has become very technical, requiring the service of individuals with training beyond that of the craftsman. Some of the opportunities available to the welding technician are welding foreman, leadman, supervisor, analyzer, inspector, research specialist, and welding equipment salesman.

First Year	F	W
MfgTech. 131		3
MfgTech. 124, 126	3	3
ElecTech. 100	1	
DesTech. 111	2	
MfgTech. 132		2
Math. 121	3	
DesTech. 291R	0	0

Second Year	F	W
MfgTech. 229, 226	3	5
MfgTech. 335, 227	4	3
ElecTech. 242	3	
Physics 105	3	
DesTech. 291R	0	0

Manufacturing Technology Courses

124. Welding Processes. (3:2:4)
Theory, application, and economics.

126. Electric Welding Laboratory. (3:0:9) Prerequisite: concurrent registration in MfgTech. 124.
Arc welding of steel plate, emphasizing commonly used joints.

131. Production Operations. (3:2:3)
Capabilities and operations of basic machine tools on a production basis. Application and use of inspection gages for quality control.

132. Manufacturing Processes. (2:2:0)
Casting (hot and cold), forming, welding, machining, and finishing. Field trip required.

225. Quality Assurance. (3:2:2) Prerequisite: MfgTech. 132.
Functions, including quality control, nondestructive testing, and industrial statistical methods.

226. Electrical Welding. (5:2:8) Prerequisite: MfgTech. 124.

Theory and application. Includes submerged arc, resistance, stud, and gas-shielded welding and arc cutting.

227. Inert-Gas Welding. (3:1:5) Prerequisite: MfgTech. 124.

Gas-shielded welding of ferrous and nonferrous metals.

229. Metal Forming. (3:2:2) Prerequisite: MfgTech. 132.

Various forming methods: blanking, drawing, benching, extruding, forging, etc.

230. Numerical Control Programming. (3:2:2) Prerequisites: completion of or concurrent registration in MfgTech. 131.

Programming tools using manual and computer-assisted methods.

265. Laboratory Methods in Materials Science. (2:1:3)

Laboratory investigations including optical spectroscopy, X-ray spectroscopy and diffraction, thermal methods, atomic absorption, wet chemical methods, and related techniques.

331. Cast Metal Processes. (3:2:3) Prerequisites: MfgTech. 335; completion of or concurrent registration in MfgTech. 360.

Melting, pouring, solidification, casting problems, design considerations, and testing as they apply to latest foundry processes. Automated and computer-controlled foundries.

332. Production Planning. (3:3:0) Prerequisites: MfgTech. 132; Stat. 221; ComSci. 131.

Planning and coordination of manufacturing facilities for economical production. Material utilization, batch sizes, motion and time studies, scheduling, and plant layout.

335. Introduction to Physical Metallurgy. (4:3:3) Prerequisites: MfgTech. 132; completion of or concurrent registration in Physics 106.

Properties, testing, heat treating, selection, and use of metals.

336. Basic Fluid Power. (3:2:2) Prerequisite: Math. 121; Physics 106 or concurrent registration.

Hydraulic and pneumatic systems as a means of transmitting and controlling power; component identification and operation; fluid power graphical symbols, circuits, and applications.

338. Machine Tool Performance. (3:2:2) Prerequisites: MfgTech. 131, 335.

Cutting tool geometry, tool materials, forces, feed, speed, surface finish, horsepower requirements, cutting fluids, vibration, and machine tool evaluation.

345. Materials Science—Nonmetals. (3:2:2) Prerequisite: MfgTech. 335.

Chemical, physical, thermal, electrical, optical, and magnetic properties of materials in terms of basic atomic structure and bonding.

360. Plastics Tooling and Processing. (3:2:3) Prerequisite: MfgTech. 132.

Design, development, and application.

399R. Cooperative Education: Manufacturing Technology. (1-6:0:0 ea.) Prerequisite: consent of department and college coordinators.

On-the-job experience. Report required. Maximum of 6 credit hours applicable toward technical electives.

425. Metallurgy of Welding. (3:3:0) Prerequisites: MfgTech. 124, 335, 345.

Basic metallurgical principles pertaining to welding procedures; prediction of weld behavior.

430. Manufacturing Process Planning. (3:3:0) Prerequisites: MfgTech. 331, 332, and 338 or concurrent registration.

Manufacturing analysis, process capability and selection, operations, equipment specifications, and tooling; value analysis, make-or-buy decision, manufacturing economics, estimating, process information, and control.

431. Tool Design. (3:2:2) Prerequisites: MfgTech. 131, 132.

Design of special tooling as applied to manufacturing processes.

433. Compulter-Aided Manufacturing Systems. (3:2:3)

490R. Special Problems in Manufacturing Technology. (1-3:Arr.:Arr. ea.) Prerequisite: consent of instructor.

491R. Senior Seminar. (1:1:0 ea.) Prerequisite: junior or senior standing.

Furthering education and professional development through special topics presented by faculty and personnel from industry.

498R. Manufacturing Development Laboratory. (2:0:6 ea.) Prerequisites: consent of instructor; senior standing in manufacturing technology.

Individual projects for manufacture. Projects must be approved by instructor.

530. Plant Layout and Materials Handling. (3:3:0) Prerequisites: MfgTech. 332; ComSci. 131.

Theory and practical application of plant layout techniques, emphasizing materials handling systems.

533. Computer-aided Manufacturing Systems. (3:2:3) Prerequisite: MfgTech. 332 or consent of instructor.

Rationale and design of computer-aided manufacturing systems: design criteria, logic, flow diagrams, and software and hardware requirements, emphasizing real-time interactive process planning and control.

595R. Special Topics. (Arr.)

599R. Cooperative Education: Manufacturing Technology. (0-6:0:0) Prerequisite: departmental approval.

On-the-job training. Report required. Use with master's program for CAM.

699R. Thesis in Computer-aided Manufacturing. (6:0:0 ea.) Prerequisite: departmental approval.

Graduate Program

Master of Science in Computer-aided Manufacturing

Coordinator: Kay S. Mortensen

A program designed to accommodate the needs of students and industry in the broad area of advanced manufacturing, emphasizing computer-aided manufacturing (CAM) and computer-aided design (CAD).

Entrance Requirements. (1) B.S. degree in engineering technology, engineering, or consent of the department; (2) evidence of completion of at least one year of relevant industrial experience; and (3) course work in the areas of manufacturing processes, materials science, design and graphics, electronics, computer programming, physics, and calculus.

Program Requirements. Mfg. Tech. 530, 533, 537, and 699R. The program must include 20 hours of 500-level courses and a total of 30 credits, including thesis.

Interested students should contact the department graduate coordinator for procedures, application forms, and other details.

Industrial Technology Building Construction

Program Supervisor: Lon J. Wallace

In addition to the basic mathematics and science courses, the Building Construction Technology Program includes instruction in basic woodwork, drafting, cabinet work, house framing, carpentry finishing, plumbing, house wiring, masonry, building materials and methods, applied mechanics, estimating, accounting, economics, and business management.

People who know how to effectively use new techniques as well as traditional building methods are much in demand in the construction industry. The building construction major is planned to prepare graduates to fill this need. Typical positions obtained by graduates are: field men for architects, building material dealers, contractors, building inspectors, and contractor field supervisors.

Completion of this program leads to the Bachelor of Science degree. A two-year associate degree is also possible for those who desire it.

Specializations: The technical electives shown should be filled through consultation with one's adviser. It is intended that students become proficient in a specialized area of their choice. It is highly recommended that these electives include courses in business management or related areas. Suggested courses are shown following the curriculum outline.

High School Preparation: Recommended high school courses include drafting, algebra, trigonometry, and woodworking.

Transfer Credit: Students transferring into the building construction technology program should meet with an adviser prior to enrollment so that accumulation of excessive hours may be avoided.

Graduation Requirements

Students should understand that general education requirements (including religion) are in addition to the course requirements shown in the typical program. Students are urged to obtain a complete integrated course program from their department office.

Besides common core requirements the student must complete an approved 12-hour sequence of technical electives. Cooperative industrial experience in the major field prior to graduation is strongly encouraged. A minimum grade-point average of 2.0 must be maintained for graduation. Grades of D or lower will not be acceptable for courses in the major field. A student must complete 40 semester hours of upper-division credit. It is therefore important that students complete some of these in the general education and technical elective areas.

Sequence of Courses: It is intended that each student follow the sequence of courses as shown below. This will prevent delay owing to unexpected course prerequisites. Courses will be provided during the third semester to enable students to complete the program in a shorter time if they desire.

First Year	**F**	**W**
Indus. 100, 105	3	2
Indus. 139	2	
MfgTech. 124		3
Math. 121, 122	3	3
ElecTech. 100	1	
Econ. 110		3
Physics 105		3
DesTech. 291R	0	0

Second Year	**F**	**W**
Indus. 210	3	
BldgTech. 341, 211, 218	2	4
DesTech. 111, 355	3	3
Acctg. 201		3
Physics 106		3
Math. 223	3	
DesTech. 291R	0	0

Third Year	**F**	**W**
DesTech. 316	4	
DesTech. 212, CivEng. 211	3	2
Technical electives*	3	3
BldgTech. 317	2	
DesTech. 291R	0	0

Fourth Year	**F**	**W**
BldgTech. 410, 411	3	3
BldgTech. 301, 408	3	3
OrgB. 321	3	
DesTech. 356		3
Technical electives*		2
MfgTech. 491R	1	
BldgTech. 415	2	

***Technical Electives:** May be chosen from any technology courses; from selected courses in environmental design, industrial design, and botany, or from Indus. 189, 300, 319, 440, 491R, 535; BusMgt. 361, 461; OrgB. 425; CivEng. 321, 471. Also chemistry, economics, physics, or mathematics courses may be selected.

For the benefit of those students who wish to complete the program in three years by utilizing Spring and Summer Terms, the following curriculum schedule is provided:

First Year	**F**	**W**	**Sp/Su**
Indus. 100, 105, 210	3	2	3
Indus. 139	2		
MfgTech. 124		3	
BldgTech. 341			2
Math. 121, 122, 223	3	3	3
Econ. 110		3	
DesTech. 111			3
ElecTech. 100	1		
Physics 105		3	
DesTech. 291R	0	0	

Second Year	**F**	**W**	**Sp/Su**
BldgTech. 211, 218	4		
DesTech. 335, 316, 212	3	4	3
CivEng. 211		2	
Acctg. 201	3		
Physics 106	3		
Technical electives*		5	3
DesTech. 291R	0	0	

Third Year	**F**	**W**	**Sp/Su**
BldgTech. 410, 411	3	3	
BldgTech. 301, 317, 408	3	5	
DesTech. 356		3	
OrgB. 321	3		
Technical electives*	2		
MfgTech. 491R	1		
BldgTech. 415	2		

Light Building Construction Technician

Adviser: Lon J. Wallace

Following is a light building construction associate degree program designed for those students who do not desire to complete a four-year curriculum. Courses taken in this area may count toward the baccalaureate degree if students later decide to further their education in this area.

This associate degree program is designed to prepare students to become successful building construction technicians trained in the construction of residential homes and small buildings, where new construction techniques and materials have made radical changes in the last decade. Building construction technicians are employed as assistants to foremen and supervisors or as helpers to contractors and building specialists. Successful experience in this field leads to many opportunities, including positions as building contractors, supervisors, estimators, inspectors, consultants, company managers, appraisers, and building materials salesmen.

First Year	**F**	**W**
Indus. 100, 105	3	2
Indus. 139	2	
MfgTech. 124		3
Math. 121, 122	3	3
ElecTech. 100	1	
Physics 105		3
Econ. 110		3
DesTech. 291R	0	0

Second Year	**F**	**W**
Indus. 210	3	
BldgTech. 211		2

BldgTech. 341, 218	2	2
DesTech. 355	3	
BldgTech. 317, 410	2	3
BldgTech. 411		3
CivEng. 211	2	
BldgTech. 301		3
DesTech. 291R	0	0

Building Construction Technology Courses

211. Carpentry Finishing. (2:1:3)
Problems in interior and exterior trim.

218. Plumbing. (2:1:3)
Plumbing and plumbing layout.

301. Cabinetmaking and Millwork. (3:1.5) Prerequisite: Indus. 100.
Design and construction of cabinets, and study of milling operations.

317. Concrete and Masonry. (2:1:3)
Preparing, forming, placing, finishing and curing concrete; laying brick and concrete block walls with ties and reinforcement; introduction to masonry.

341. House Wiring. (2:2:2)
Electrical circuits in homes and farm buildings

399R. Cooperative Education: Building Construction Technology (1-6:0:0 ea.) Prerequisite: consent of department and college coordinators. Students must meet departmental requirements and consult adviser prior to enrollment.
On-the-job experience. Report required. Maximum of 6 credit hours applicable toward technical electives.

408. Building Systems Design. (3:3:0) Prerequisites: DesTech. 316, 355; Math. 223.
Applied psychometrics, heating and cooling, load estimating, equipment selection, piping design, air distribution, hydronics, basic controls, and specifications for mechanical building-systems design.

410. Construction Materials and Methods. (3:3:0)
Theoretical aspects of building, locations, soil conditions, footings, materials, and equipment.

411. Estimating. (3:3:0)
Interpreting plans and specifications; figuring costs of materials and labor.

415. Administrative Practices in Construction Contracting. (2:2:0) Prerequisites: BldgTech. 410 and 411.
Applying sound business practices in construction, licensing, insurance, legal pitfalls, state and federal tax requirements, safety regulations, project planning, etc.

494R. Special Problems in Building Construction. (1-3:Arr.:Arr. ea.) Prerequisite: consent of instructor.

Specialized Associate Degree Program Graphics Arts Technician

Supervisor: Ron H. Jenkins

Printing is one of the major industries in our country today. It is vital to business and industrial organizations, civic and community organizations, and to the social, political, and economic life of our nation. Because of increasingly complex mechanized printing equipment in use today, there is a growing need for technically trained personnel in all areas of printing production and management. The graphic arts technician program prepares students for work in printing and publishing industries, government agencies, manufacturers of paper products, and in the smaller private firms that do their own printing.

First Year	**F**	**W**
Indus. 250, 351	3	3
Physics 177		3
ArtDs. 109, 241R	5	
BusEd. 101		2
Econ. 110		3
DesTech. 111	2	
DesTech. 291R	0	0
ElecTech. 100	1	

Second Year	**F**	**W**
Comms. 263, 264	3	3
Indus. 451, 452	3	2
Math. 121	3	
Indus. 453, 454	3	3
Chem. 102		5
DesTech. 291R	0	0

Physical Plant Administration

This program prepares one to serve in administrative and supervisory positions in industry and in physical plant departments of universities and colleges. During the next few years, billions of dollars will be spent for new college construction and campus improvements at nearly two thousand campuses across the nation. This does not include equal or larger sums which will be spent in plant development, maintenance, and operation by private enterprise. The physical plant administration curriculum is designed and offered to train people for these important positions. Graduates will be well prepared to supervise the programming, planning, and construction of major physical facilities as well as to administer maintenance and operation programs at college and university levels, and in private industry.

Students completing this four-year program receive the Bachelor of Science degree in physical plant administration.

First Year	**F**	**W**
Acctg. 201		3
Econ. 110	3	
Math. 121, 122	3	3
DesTech. 111		2
Chem. 102		5
MfgTech. 399R		2
DesTech. 291R	0	0
ElecTech. 100	1	

Second Year	**F**	**W**
Bot. 105		3
CivEng 211		2
Comms. 102	2	
DesTech. 355		3
Physics 105, 106	3	3
ArtDs. 109, Bot. 400	2	2
Math. 223	3	
MfgTech. 132	2	
DesTech. 291R	0	0

Third Year	**F**	**W**
MfgTech. 345	3	
ElecTech. 242		3
ComSci. 131	3	
Stat 221		3
DesTech. 256	3	
Micro. 311		2
OrgB. 321	3	
Technical electives		2
DesTech. 291R	0	0

Fourth Year	**F**	**W**
BldgTech. 410, 411	3	3
MfgTech. 491R	1	
MfgTech. 332	3	
Econ. 361	3	
CivEng. 573		3
BusMgt. 361	3	
Geog. 522		3
DesTech. 356		3
Indus. 535 or Health 325		2

For those who wish to complete the program in a shorter time by utilizing the Spring and Summer Terms, the following curriculum schedule is presented

First Year	**F**	**W**	**Sp/Su**
ElecTech. 100, Acctg 201	1	3	
Bot 205			2

Econ. 110	3		
Comms. 102			2
Math. 121, 122, 223	3	3	3
DesTech. 111		3	
ArtDs. 109			2
Chem. 102		5	
Physics 105			3
MfgTech. 399R, 132	2		2
DesTech. 291R	0	0	
Second Year	**F**	**W**	**Sp/Su**
CivEng. 211	2		
MfgTech. 345		3	
ElecTech. 242			3
DesTech. 256, 355	3	3	
ComSci. 131		3	
Stat. 221			3
Physics 106	3		-
OrgB. 321		3	
Micro. 311			2
DesTech. 291R	0	0	
Third Year	**F**	**W**	**Sp/Su**
BldgTech. 410, 411	3	3	
Econ. 361, CivEng. 573	3	3	
Bot. 400		2	
BusMgt. 361	3		
Geog. 522		3	
MfgTech. 491R	1	1	
MfgTech. 332, technical elective	3	2	
Indus. 535 or Health 325		2	
DesTech. 356		3	

Theatre and Cinematic Arts

Professors: Danielewski, Gledhill, Hansen, Metten (Chairman, D-581 HFAC), Pope, Woodbury.
Associate Professors: Henson, Oaks, Whitman.
Assistant Professors: Crosland, Frost, Golightly, Jenkins, McKinlay, Walker.
Instructors: Fielding, Swenson.

Undergraduate Program

The theatre and cinematic arts program at BYU is designed to give students a comprehensive experience in the art, production, history, and technical elements of theatre, film, and videotape production. A major purpose is to produce artistic work that is consistent with the teachings of the Savior, work of such high quality that it is sought after. We reject the vulgarity and immorality that permeate most theatre, film, and television today. This concept forces upon us independence and separation from much of the world of theatre and cinematic arts as they now exist. We strive, however, to be so competent and refreshing that others will wish to emulate us. As well as encouraging theatre, film, and television that is consistent with the ideals of the gospel, we nurture theatre arts that are unique to the gospel. That is, we seek to develop a drama that will inspire, edify, and draw audiences to Christ.

The curriculum is designed to lead to the highest levels of competency in acting, child drama, theatre arts secondary education, directing, liberal arts, playwriting, technical theatre, musical-theatre production, and cinema-videotape production and to prepare interested and qualified students for graduate study.

Students in the program are expected to participate in University Theatre productions. All productions are cast from open tryouts so that all students may have the opportunity of participating. The University Theatre produces an average of 18 faculty-directed productions each year, 2 of which are major TV-film productions in cooperation with KBYU-TV, Department of Communications, and MPS. Also 125 student-directed stage productions are produced each year.

Degrees Available

The baccalaureate degree is available with emphasis in theatre arts education, acting, child drama, directing, liberal arts, playwriting, technical theatre, musical-theatre production, or cinema-videotape production.

The drama education program leads to secondary teaching certification in the state of Utah. The objective of this program is to provide students with the skills, research methods, and actual teaching experience needed to teach theatre arts effectively on the high school level.

Also, four Associate of Arts degrees are available; church theatre specialist (C T S ASSC), technical theatre specialist (T T S ASSC), costume specialist (CST S ASSC), and performance specialist (PRF S ASSC). Requirements for these AA degrees are listed separately.

Baccalaureate Degree. All majors seeking a baccalaureate degree in theatre and cinematic arts except those in theatre arts education and film-TV will complete the following core of courses (23 hours) and the requirements listed in the general education programs section:

ThCA 121, 123, 319, 320, 361, 461, 464, and 465.

Theatre Arts Laboratory. The theatre arts laboratory is sponsored by the department to provide practical experience and participation in the theatre arts. Attendance and participation are required for many of the classes.

Course Requirements for Acting Emphasis

Those who plan to pursue a career as actors or as teachers of acting on the university level will complete the 23-hour theatre arts core and the following courses (56 hours required):

ThCA 124, 126R, 323R, 324R, 424R, 425R, 523R, 524R, 260 (or 560), PE 183, 187; plus electives from the following: ThCA 115, 325, 362, 378R, PE 110, 172, for a total of 56 hours required.

Course Requirements for Child Drama Emphasis

Those who plan to pursue a career in children's theatre and/or creative dramatics at the elementary, secondary, or college level or to work in recreation departments or in connection with community theatres or regional theatre schools will complete the 23-hour theatre arts core plus the following courses (56 hours required):

ElEd. 340; Engl. 420; ThCA 115, 126R, 360, 472R, 560R and 572R, plus the following (taken in addition to the general education requirements): CDFR 210 and Psych. 320 or 321, and an additional 10 hours of electives.

Course Requirements for Costume Design Emphasis

Those who plan to pursue a career as a theatre costume designer/costumer will complete the 23-hour theatre arts core and the following strongly recommended courses (56 hours required):

ArtDs. 107, 116, CloTx. 105, 165, 260, 330, 345, ThCA 126R, 260R, 362, 560R, 562, plus electives: ArtDs. 117, CloTx. 265, 350, 355, 430, for a total of 56 hours required.

Course Requirements for Designer-Technician Emphasis

Those who plan to pursue a career as a theatre designer or designer-technician will complete the 23-hour theatre arts core and the following strongly recommended courses (56 hours required):

33 hours to be selected from ArtDs. 102, DesTech. 104, 111, 256, Indus. 100, 124, 139, 240, 405, BldgTech. 341, IntEnv. 237, 238, ThCA 126R, 326, 362, 519, 520, ThCA 260R (or 560R) and 526.

Course Requirements for Directing Emphasis

Those who plan to pursue a career in directing or who wish a career in teaching and directing at the university level will complete the 23-hour theatre arts core and the following courses (56 hours required):

ArtDs. 102, ThCA 115 or 117R, 124R, 126R, 323R, 324R, 360, 572, 362, 378R, 519, 520; plus the following (taken in addition to the general education requirements): Engl. 343 and 382.

Course Requirements for a Liberal Arts Emphasis

A student may elect to earn a baccalaureate degree in theatre arts without emphasis in a specialty. This program is intended to provide a liberal arts approach, leading to a degree in demand among a variety of employers, including graduate schools and related disciplines. The student will complete the 23-hour theatre arts core and the following courses (56 hours required):

ThCA 115 or 117R, 126R, 325, 327R, 378R, 260R or 560R, plus the following (taken in addition to the general education requirements): art and design (3 hours), English (6 hours, preferably dramatic literature), language (3 hours), music (2 hours), and history (3 hours).

Motion Picture and Television Production Emphasis*

*This is an interdisciplinary program from the Department of Communications and the Department of Theatre and Cinematic Arts.

Those who plan to pursue a career in motion picture-television production (writing, directing, acting, cinematography, editing, art design, history-criticism) or who wish to teach in these areas at the university level will complete the following, depending upon which core work (communications or theatre and cinematic arts) the student wishes to pursue.

The student electing to major in the Department of Communications will take the following core:

Communications Core (19 hours)

Comms. 100 (3) Introduction to Human Communication
Comms. 101 (2) Introduction to Mass Communication
Comms. 399R (1-4 ea.) Professional Communications Experience
Comms. 480 (3) Senior Seminar

In addition to this core, the following prerequisites are necessary:

ArtDs. 102 (2) Basic Design for Nonmajors
Physics 177 (3) Physics of Light and Photography
Comms. 263 (3) Photography Foundation 1.

Strongly recommended for the communications core: ThCA 123, 361, 378R

The student electing to major in the Department of Theatre and Cinematic Arts will take the following core:

Theatre and Cinematic Arts Core (21 hours)

ArtDs. 102 (2) Basic Design for Nonmajors
Physics 177 (3) Physics of Light and Photography
Comms. 255 (2) Introduction to Broadcasting
Comms. 263 (3) Photography Foundation 1
ThCA 123, 378R, 361, 461

Strongly recommended: ThCA 121

All students majoring in the motion picture and television production emphasis, regardless of which department, will complete their individually recommended core and the following courses:

ThCA 117R, 127R, 317R, 417R, 425R or 478R or 561R
Comms. 272 (2) Fundamentals of Motion Picture Production
Comms. 346 (2) Broadcasting 1
Comms. 374 (3) Motion Picture Photography Comms. 375 (3) Motion Picture Editing
Comms. 456 (3) Television Directing
Comms. 495R (2-6 ea.) Special Projects (workshop required in motion picture and television production)

or

Comms. 691R (1-3 ea.) Special Studies
ThCA 561R, 478R

and two communications courses teaching sound recording and business management for motion picture and television.

Communications Major:
17 hours (core) + 8 hours (prerequisite) + 31 hours (emphasis) = 56 hours
Theatre and Cinematic Arts Major:
21 hours (core) + 31 hours (emphasis) + 4 hours (electives) = 56 hours
Suggested electives:
ArtDs. 241 (2) Design in Layout and Lettering
ArtDs. 320R (3 ea.) Fundamentals in Design
ArtDs. 420R (3 ea.) Design Studio
Comms. 230 (2) Introduction to Advertising
Comms. 264 (3) Photography Foundation 2
Indus. 250 (3) Graphic Arts
ThCA 124, 320, 417R, 617R

Musical Theatre Emphasis

Those who plan to pursue a career in the musical theatre as an actor-singer-dancer or as a teacher of musical theatre production on the university level will complete the 23-hour theatre arts core and the following courses (56 hours required):

ThCA 124, 126R, 323R, 324R, 325, 523R; Music 105R (or 159R), 165; PE 110, 173, 183, 185, 187, 188, 287R; plus 4 hours of electives in music or dance.

Course Requirements for Playwriting Emphasis

Those planning a career as a playwright or as a university professor of playwriting will complete the following sequence of courses (acceptance into this program assumes a strong desire to write and to submit manuscripts, at the suggestion of the adviser, to appropriate production companies and contests): the 23-hour theatre arts core and the following courses (56 hours required):

ThCA 117R, 378R, 478R, 578R; Engl. 218R, 318R, 319R, 326, 343, 382; and Phil. 110 and 352; Comms. 427.

Course Requirements for Theatre Arts Education (Secondary Certification)

Students planning to teach theatre arts on the secondary level must complete the following

Teaching Major (37 hours)
ThCA 115, 123, 124R, 126R, 319, 320, 325, 360, 361*, 362, 371, 377, 461*, and 464* or 465* (ThCA 117R and 121 recommended but not required).

Teaching Minor (24 hours)
ThCA 123, 124R, 126R, 319, 320, 361*, 371, 377, 461*.

*These courses must be taken sequentially in the junior or senior year.

Prerequisites for ThCA 361: ThCA 121, 123 or 124R, and major production experience or equivalent

The theatre arts education major must complete requirements leading to certification as outlined by the College of Education (see Education section of this catalog), in addition to Theatre and Cinematic Arts departmental offerings.

Associate of Arts Degree

Each area of specialization includes 32 hours in theatre and cinematic arts, plus the requirements listed in the General Education Programs section of this catalog

Church Theatre Specialist. This associate degree is designed for those who are interested in theatre for enrichment and personal development. A Church theatre specialist is a person who may work effectively on the ward, stake, or regional theatre level. This degree in no way supersedes or supplants the bachelor's degree but prepares an individual for an in-depth study in this field The following courses must be completed

ThCA 121 (3), 115 (3), 117R (2), 123 (3), 126R (2), 260R or 560R (2), 319 (3), 320 (3), 360 (3), 361 (3), 362 (2), 378R (2), and 461 (3) for a total of 32 hours in the major.

Technical Theatre Specialist. An associate degree in technical theatre from the Department of Theatre and Cinematic Arts qualifies an individual to serve as a technical theatre consultant for community theatre productions or ward, stake, or regional theatre productions of the Church. Study in this field provides a sound foundation in the basics of technical theatre and encourages further study in the area of technical theatre for a bachelor's degree. The following courses must be completed.

ThCA 115 (2), 123 (3), 126R (2), 260R (3), 319 (2), 320 (3), Indus. 139 (2), ArtDs. 102 (2), IntEnv. 237 (3), plus 10 hours of electives from the following: ThCA 260R (3), DesTech. 104 (2), 111 (2), 256 (3), Indus. 100 (3), 124 (3), 139 (2), 240 (3).

Costume Specialist. Persons completing this associate degree will be capable of working as costume consultants for community theatre productions or for Church productions as costume designers and seamstresses capable of creating the costumes they have designed. Their capability also extends to the field of stage makeup and hair styling for wigs and for stage. The following courses must be completed:

ThCA 115 (2), 123 (3), 126R (2), 319 (3), 320 (4), 361 (3), 362 (2), 461 (3); CloTx. 165 (4), 260 (3), 330 (4), and 345 (3) for a total of 32 hours in the major.

Performance Specialist. The performance specialist will be prepared for further professional training in the areas of television, radio, stage and film acting, and announcing. This program is ideal for developing LDS philosophy and ethics before going into professional work.

The following courses must be completed:

ThCA 121 (3), 123 (3), 124R (3), 126R (2), 260R (5), 323R (3), 324R (3), 325 (3), 424R (4); Music 105R (2); and PE 173 (½) and 183 (½) for a total of 32 hours in the major.

Graduate Program

Programs: Theatre and Cinematic Arts: Master of Arts (M.A.), Master of Fine Arts (MFA), Doctor of Philosophy (Ph.D.).

Master of Arts

Definition. The Master of Arts (M.A.) degree program is for those students who are interested in scholarly (historical, critical, analytical, descriptive, or experimental) or educational aspects of theatre, cinema, or television. This degree is not to be considered as a terminal degree, but as a preparation for work at the Ph.D. level.

Prerequisites. Acceptable undergraduate background in theatre arts.

Field. Theatre and cinematic arts (emphasizing in theatre history, theory and criticism, motion picture history, acting, directing, interpretation, technical theatre, playwriting, screenwriting, child drama, or theatre administration).

Minors Permissible. Option 1 or 2.

Requirements. 26 hours plus thesis (6-hr. min.—699R); or 32 hours plus a written report of project (to be filed with Graduate School) and a comprehensive written and oral examination.

Required Course. ThCA 690, required of all graduate students during first semester of registration.

Master of Fine Arts

Definition. The Master of Fine Arts (MFA) degree program is for those students who are interested in the performance (acting, directing, writing, designing settings and/or costumes) aspects of theatre, cinema, or television.

Admission. Information available from the Department of Theatre and Cinematic Arts.

Fields. Acting, directing, playwriting, theatre design and technology.

Minors. None required.

Requirements. Minimum of 60 hours (including project), a six-hour written examination and a two-hour oral examination.

Required Courses. Contact department for specific listings.

Doctor of Philosophy

Field. Theatre and Cinematic Arts.

Requirements. 45 hours in theatre and cinematic arts, 15 hours in a minor, plus a dissertation (18-hr. min.—799R). Three kinds of dissertation research will be accepted: (1) scholarly analysis of theatre and/or motion picture/television history, theory, and criticism; (2) research and strong creative achievement in playwriting or screenwriting and stage or cinematic arts production; and (3) measurement studies.

Required Courses. ThCA 690 and 799R.

Courses

115. Introduction to the Theatre. (2:2:1) (G-HA) Home Study also.
Fundamental theories; developing discriminating appreciation of theatre via lectures, demonstrations, and productions. Theatre arts lab required.

117R. Introduction to Motion Picture Art. (2:2:1 ea.) (G-HA)
Background for understanding and appreciating the best of motion picture art: theatrical, educational, and documentary.

121. Voice, Diction, and Interpretation. (3:3:1) (G-HA)
Training and theory to develop skill in voice and body communication, church speaking, self-identification. For teachers, speakers, professionals. Attendance at theatre arts lab required.

123. Beginning Acting for Cinema and Stage. (3:4:1)
Foundation course emphasizing Stanislavski's system. Practice in basic acting skills: vocal, physical, emotional, improvisational, and perceptional. Attendance at theatre arts lab required.

124R. Acting the Classics. (3:6:1 ea.) Prerequisite: ThCA 123 or equivalent.
The Stanislavski approach.

126R. Stage Makeup. (2:2:2 ea.)

127R. Film and Television Makeup. (2:2:2 ea.)

260R. Theatre Workshop 1. (1-6:0:1-6 ea.)
Integration of theatre's individual arts in production: acting, directing, technical theatre, playwriting, and children's theatre.

299R. Cooperative Education. (1-9:0:6 ea.)
Stage, film, and television writing, directing, acting, design, and management apprenticeship.

317R. Motion Picture as a Mirror of Our Times. (2:3:0 ea.) (G-HA)
Filmmakers' intentions that influence thinking and manage emotions; meaning and study of entertainment elements.

319. Beginning Technical Theatre: Construction and Painting. (2:2:2)
Basic theories and practices of theatre scenery construction, drafting, painting, shifting, and rigging. ThCA 361 may be taken concurrently. Lab required.

320. Beginning Theatrical Design: Setting and Lighting. (3:3:3) Prerequisites: ThCA 319 and 361 or consent of instructor.
Basic theories and practices of theatre scenery design, lighting, properties, and sound. Lab required.

323R. Musical Comedy. (3.6:1 ea.) Prerequisite: ThCA 124R.
Advanced development of acting, singing, and dancing for musical theatre.

324R. Dialect and Character Acting. (3.6:1 ea.) Prerequisite. ThCA 124R.
Advanced development of acting skills required in creating character, age, and dialect.

325. The Art of Interpretation. (3.3.1) Prerequisite ThCA 121.
Developing performance skills in dramatic reading, humorous reading, storytelling, and related platform techniques. Attendance at theatre arts lab required.

326. Beginning Theatre and Studio Sound. (2:2:1)
Basics of theatre acoustics and operational techniques: recording, editing, and reinforcement.

327R. Play Analysis. (1:2:0 ea.)
Analysis, interpretation, and reading aloud.

360. Creative Dramatics. (3:3:2)
Informal or improvised dramatic techniques and storytelling with young people. Applied to school, church, home, community, and park and recreation programs.

361. Directing Theory. (3:2:4) Prerequisites: ThCA 121, 123 or 124R, and major production experience.
Theories of directing for church, educational, and recreational theatre, preparation for advanced work in directing. Attendance at theatre arts lab required.

362. Theatrical Costume Design. (2:2:3)
Principles and aesthetics of costume design and construction.

371. Theatre Arts Programming. (2:2:1) Prerequisites: ThCA 115, 121, 123, 319, and 320.
Preparation for judging, conducting, and performing in contest areas of theatre arts in high school. For teaching certificate candidates in ThCA.

377R. Secondary Teaching Curriculum and Methods. (3:3:1 ea.) Prerequisite: SecEd. 276.
Evaluation and preparation for student teaching, lectures, demonstrations, observation, pretesting, and developing methods and materials.

378R. Playwriting. (2:4:0 ea.) Home Study also.
Theory and technique of writing the one-act and full-length play.

399R. Cooperative Education. (1-9:0:6 ea.)
Stage, film, and television writing, directing, acting, design, and management apprenticeship.

417R. Theory and Criticism of Film Art. (3:3:0 ea.) (G-HA) Prerequisites. ThCA 117R and 317R.
Filmmakers' use of money and aesthetic tools, symbolism as the ultimate means of indirect communication.

424R. Acting for Motion Picture and Television. (4:3:2-6 ea.) Prerequisite consent of instructor.
Adapting basic acting stage techniques to motion picture and television. On-camera experience. Lab required.

425R. Actors' Professional Workshop. (5.5.5 ea.) Prerequisites. concurrent enrollment in ThCA 317R, 417R, or 517R. By audition and consent of instructor only.
Preparing for professional screen and stage acting careers. Lab required.

461. Directing the One-Act Play. (3:2:4) Prerequisites ThCA 320, 361 or equivalent.
Directing two one-act plays for presentation. Attendance at theatre arts lab required.

464. Theatre History 1. (3:3:0)
Primitive, Egyptian, Greek, Roman, Medieval, Elizabethan, and LDS.

465. Theatre History 2. (3:3:0)
Oriental, Renaissance (Italy and France), English Restoration, romanticism, realism, and departures from realism.

472R. Puppetry. (3:4:0 ea.)
Theories, techniques, and experience constructing and operating puppets for use in performance, recreational, and educational settings.

478R. Writers' Professional Workshop. (3:3:3 ea.) Prerequisites ThCA 378R, 361, 461, and concurrent enrollment in 317R or 417R, consent of instructor.
Mastering skills of professional motion picture and television screen writing.

479. Secondary Student Teaching. (4-8:1:20-80) Prerequisites ThCA 377R and completion of two-thirds of courses required for teaching major and minor or composite.

517R. Genres and/or Directors of Motion Picture Art. (3:3:0 ea.) Prerequisite ThCA 417R or equivalent.
Topics include such genres as musicals and westerns and such directors as Ford, Welles, Bergman, etc.

519. Advanced Technical Theatre: Construction and Painting. (2:2:2) Prerequisite ThCA 319.
Lab required.

520. Advanced Theatre Design: Setting and Lighting. (3:3:3) Prerequisites ThCA 320 and 361.
Lab required.

521. Motion Picture and Television Art Direction. (3:3.3) Prerequisite: ThCA 319, 320, or consent of instructor.
Fundamentals of motion picture/television art-direction, design, and technical backup.

523R. Advanced and Experimental Acting Methods. (5.5:6 ea.) Prerequisite ThCA 324R.
Acting the major or experimental methods, intensive training in performance of major works leading to a public performance.

524R. Applied Acting Techniques: Performing and/or Teaching. (5:1:2) Prerequisites: ThCA 523R or equivalent, acting competency shown in audition or special permission of instructor.

526. Advanced Theatre and Studio Sound. (2.1:1) Prerequisite. ThCA 326.
Sound theory, practice, and methodology of studio recording, reinforcement, and mixdown systems.

527. Storytelling. (2:2:1)
Theory, technique, and practice. Valuable for teachers, exceptional child educators, and youth leaders.

560R. Theatre Workshop 2. (1-6:0:3-18 ea.)
Integration of theatre's individual arts in production: literature, directing, acting, and stagecraft.

561R. Directors' Professional Workshop. (3:3:3 ea.) Prerequisites ThCA 123, 124R, 323R, 324R, 361 and previous or concurrent enrollment in 461.
Lab required.

562. Advanced Costume Design for Stage and Screen. (2:2:2) Prerequisite. ThCA 362 or consent of instructor.

572R. Theatre for Children. (2:3:1 ea.)
Theories, techniques, and experience in creating formal drama for the child and youth audience.

578R. Advanced Playwriting. (2-6:4:0 ea.) Prerequisite ThCA 378R.
Seminar in playwriting; individual consideration of manuscripts, professional orientation.

599R. Cooperative Education. (1-9:0:6 ea.)
Stage, film, and television writing, directing, acting, design, and management apprenticeship.

600. Advanced Theatre History: The Classical Age. (3:3:0) Prerequisite ThCA 464 and 465, or equivalent.
Theory, history, and production practices of the theatre and drama of the Greeks and Romans.

601. Advanced Theatre History: The Middle Ages, the Renaissance, and the 17th Century. (5:5:0) Prerequisite ThCA 464 and 465, or equivalent.

Theory, history, and production practices of the theatre and drama of these ages.

602. Advanced Theatre History: The 18th, 19th, and 20th Centuries. (5:5:0) Prerequisite: ThCA 464 and 465, or equivalent.
Theory, history, and production practices of the theatre and drama of these ages.

617R. The American Motion Picture. (3:3:0 ea.) Prerequisite: ThCA 417R or equivalent.
History and development as an art form and business.

660R. Seminar in Interpretation. (3:3:0 ea.) Prerequisites: ThCA 121, 123 and 325, or equivalents.
Topics include history, theory, and interpretation of classical literature; program building and lecture recitals; and research-analysis of techniques and performances.

662. Seminar in the Theory and History of Theatrical Costuming. (2:2:1) Prerequisites: ThCA 362 and 562.
Major movements in costume and evolution of costuming theory, providing strong research and design experience.

664. Theatre Management. (2:2:2)
Theory and practice, including budget and promotion box office.

665. Theatre Administration. (2:2:2)
Theory and practice, including organization, philosophy, structure, and development.

668R. Special Studies in Theatre, Motion Picture, or Television History. (1-3:0:0 ea.)
Supervised research in selected historical problems.

670R. Design and Construction for the Stage.(5:5:3)

671. Advanced Directing. (3:2:2) Prerequisites: ThCA 361 and 461 or equivalents.
Production of two condensed scripts for presentation.

674R. Projects in Theatre and Film Arts. (1-4:0:0 ea.) Home Study also.
Supervised applied theory in playwriting, directing, acting, criticism, and stagecraft.

676. Stage Lighting. (1-2:1-2:0) Prerequisite: ThCA 320 or consent of instructor.
Advanced theory and techniques of theatrical lighting.

690. Research in Theatre and Cinematic Arts. (2:2:0)
Required of all graduate students during their first semester.

697R. Seminar in special Theatre Forms. (2-3::2:2 ea.)
Theory and practice ot editing, directing, and dramatizing for readers' theatre,arena, etc.

699R. Master's Thesis. (6-9:Arr.:Arr. ea.)

700. Seminar in European Theatre History.(3:3:0)
Selected research topics in England and Europe, 16th through 20th centuries.

701. Seminar in American Theatre History. (3:3:0)
Selected research topics, 18th through 20th centuries.

731. Dramatic Theory and Criticism. (5:5:0)
History and principles from ancient to contemporary times.

733. Analysis of Dramatic Forms. (3:3:0)
Study and analysis of major dramatic forms: tragedy, comedy, melodrama, and farce.

760. Directing Historical Plays. (3:2:2) Prerequisites: ThCA 600, 601, 671, and 731.
Theory and techniques of directing and staging historical and period plays: Greek, Roman, medieval, Elizabethan, Restoration, and continental.

761. Directing Modern and Abstract Plays. (3:2:2) Prerequisites: ThCA 602, 671, and 733.
Theory and techniques of directing and staging plays from the modern and abstract repertoire: expressionism, constructivism, epic, absurd, oriental, cruelty, and happening.

797R. Research. (Arr)

799R. Doctoral Dissertation. (Arr.)

University Studies

Associate Professor: Rasmussen (Chairman, 136 FOB)

Undergraduate Program

This department consists of the following programs:

1. The bachelor's degree in University studies
2. The associate degree in University Studies
3. Student-initiated classes.

Bachelor's Degree

This program provides students seeking the B.A. or B.S. degree with an alternative to a regular major. With proper advisement and authorization, a student may undertake an individually tailored degree program which consists of courses from several academic areas instead of just one. Students preparing to meet certain professional school admission requirements, students from nonindustrial countries, old students returning with career experience, and students seeking a broad education may be served by this program. Any undergraduate student at Brigham Young University who has completed 30 hours of academic credit with a grade-point average of 2.0 or higher is eligible to apply for degree-seeking status in this program. Generally speaking, students should apply for admission to this program prior to completion of their last 45 hours of work.

Application forms may be obtained from the departmental office, 136 FOB. These forms request the following information:

1. A summary of projected educational and career goals.
2. A proposal justifying entrance into the University Studies degree program; students must convince a faculty committee that their needs cannot be adequately met by an existing major program. They may be asked to consult with a faculty member who can advise regarding the suitability of a specific major to meet their needs.
3. A sketch of the occupational outlook and prerequisites for further training in their desired field of study. Students must consider and state the actual marketability of their skills. This step is included to ensure that students are aware of the potential assets and liabilities in pursuing a University Studies degree in relation to their objectives. Useful information on this point is readily available at the University Placement Center, the Personal Development Center, or the Career Education Department.
4. A tentative proposal for proposed areas of concentration.
5. A tentative proposal of all the actual courses in which students intend to enroll.
6. A recent unofficial transcript of college credits including all transfer credit from other institutions.

A faculty committee advises students in developing their programs and then authorizes them. Records and continuing advisement are thereafter handled in the College of General Studies Advisement Center. Once their proposed programs are accepted, students are expected to enroll only in the courses agreed upon in the program, unless the department or college advisement center approves a modification.

University Graduation Requirements: In addition to the courses authorized for this degree, students must complete regular University general education requirements (see the general education programs section) and 40 hours of upper-division credit; in addition, they must have a cumulative grade-point average of 2.0 and at least 30 hours in residence on the BYU campus.

Specific University Studies Requirements: Students are expected to concentrate their studies mainly within three or more fields. What constitutes a suitable field or area depends upon the student's objectives. At least 15 semester hours should be taken in each area of concentration. Normally, work in the three areas should total at least 48 hours; 100-level courses normally may not be counted in this number. A marginal application for admission to the program may be strengthened by also planning a suitable fourth, and perhaps a fifth, area for which from 10 to 14 hours of work is to be completed. A minimum of 20 of the 55 hours in the three areas of concentration must be at upper-division level. In most instances, no more than 25 hours of credit may be used from any one academic department; with more than that many hours, a major in the department is usually more sensible.

Associate of Arts Degree

Supervisor: Jerry L. Jensen, 130B BRMB.

This program is designed primarily for college students who plan to be in school only two years. It allows them to tailor their course work to meet their own needs, interests, and desires. Since that course work includes general education subjects as well as a strong concentration in a selected area of study, students can continue in bachelor's-degree study beyond two years without any loss of credit.

Refer to the general education programs section of this catalog for requirements in addition to the following:

	Hours
Area of concentration	21
Electives	11
	32

Student-Initiated Classes

Students may initiate classes tailored to their own interests where no comparable course exists in the University's curriculum. A minimum of five students are required to support an application for a class. A faculty sponsor is required but does not serve as a teacher in the conventional sense; students themselves plan the instruction and carry out the plan as approved by the University Studies Department. Further information can be obtained at 136 FOB.

Course

300R. Independent Group Studies. (Arr.:Arr.:0 ea.)
Sponsored by the department most concerned with students' areas of interest.

World Affairs

The World Affairs Center consists of six individual area studies or international studies programs. American Studies, Asian Studies, Chicano Studies, European Studies, International Relations, and Latin American Studies. It is jointly sponsored by the College of Social Sciences and the College of Humanities. Each of the six area programs offer both an undergraduate and a graduate degree. Although each of the programs offers a concurrent major in combination with a major from another department of the University, it is also possible for a student to receive an independent undergraduate or graduate degree in one of the six programs.

Those wishing further information on international relations, interdisciplinary studies, or any one of the area studies programs in the World Affairs Center should contact the respective coordinators or the office of the director of the center.

Asian Studies

Executive Committee: Gary S. Williams (Coordinator, 238 KMH), Sechin Jagchid, Dick K. Nanto, Anthony Ferguson.

Professors: Farnsworth, Hillam, Hyer, Jagchid, Palmer.
Associate Professors: Britsch, Horiuchi, Montgomery, Williams.
Assistant Professors: Beaman, Durrant, Ferguson, Lee, Nanto, Perkins, Shumway, Takasaki.
Instructor: Watabe.

Undergraduate Program

The Asian Studies Program is an interdisciplinary program offering a concurrent major or an Asian studies minor which, in combination with a major from another department, leads to the B.A. degree. In addition to the undergraduate major, the Asian Studies Program also provides work leading to the M.A. degree.

The program is designed to prepare students for careers and advanced study in the specialized field of Asia not provided by a major in one department. In the program, students acquire working competence in either Chinese, Japanese, Korean, or another specially approved Asian language; a broad knowledge of Asian civilization; and a more specialized knowledge in an academic discipline. The program is intended for those students who wish to make an intensive study of the cultural history, modern development, and problems of Asia. It applies the techniques of and acquaints students with the contributions of the humanities and the social sciences. The major as outlined is useful to students contemplating careers in academic areas, private industry, or government service. The import-export field and international services are particularly interested in persons who have a strong background in Asian studies. Students may enter the program only with the approval of the Asian Studies Committee and should register each semester thereafter under its direction.

With the approval of the coordinator, special subject tracks, such as Asian religion and Asian business and economic developments, can be arranged.

West Asia/Middle East

Students wishing to emphasize Middle Eastern studies should consult with Professor Montgomery, who will assist in working out a suitable program.

Requirements for a Major

Asian studies majors are generally required to undertake a concurrent major in a regular discipline. Exceptions must be considered by the program coordinator and/or the Asian Studies Committee. Requirements are as follows:

1. Core courses (starred in list below) dealing directly with Asia from three fields outside the regular major .... 14 hrs
2. Elective courses dealing more generally with Asia from fields outside the regular major .... 3 hrs
3. Language requirement .... 20 hrs
   A. Nonlanguage majors:
      Chinese, Japanese, or Korean Language . 20 hrs.
      Other Asian languages from South, Southeast, and Central Asia will be considered in individual cases.
   B. East Asian language majors. The 20 hours are to be divided as follows:
      (1) 101, 102, from major language .... 8 hrs.
      (2) Additional Asian language or courses from the list below .... 12 hrs.
      20 hrs.
4. Senior Seminar in Asian Studies .... 3 hrs

Requirement for a Minor

A total of 14 hours (in addition to a regular major and 12 hours of an Asian language, equivalent to the bachelor's degree requirements) divided as follows:

1. Core courses (starred in list below) ..... 8 hrs.
2. Elective courses (including 3 hours of language study) .... 6 hrs.

Graduate Program

Program. Master of Arts (M.A.).

Entrance Examination Required. None

Application Consideration Date. Same as Graduate School deadlines.

Entry Times. Any regular registration.

Master of Arts

Prerequisites. Proficiency in one Asian language; strong undergraduate preparation in Asian studies.

Field. Asian studies.

Minors Permissible. Any approved minor.

Requirements. The Master of Arts candidate will—

1. Complete a major in one of the departments of the University (all departmental requirements must be fulfilled for the major).
2. Complete at least 15 hours in approved Asian area courses at the graduate level from areas other than the department major, including two seminars in the Asian area.
3. Write a thesis on an Asian subject that is acceptable to both majors (for example, students in history would write their thesis on Asian history).
4. Meet language competency, consisting of the ability to use primary source documents in at least one foreign language.

List of Courses

- Anthropology
  - 105 (3) Introduction to Social Anthropology
  - *350 (3) Peoples of South and East Asia
- Art and Design
  - *313 (2) Survey of Oriental Art and Architecture
  - 415R (2 ea.) Special Topics
- Asian Studies—Humanities
  - *240 (3) Introduction to the Humanities of Asia
- Business Management
  - 430 (3) Introduction to International Business
- Classical Civilization
  - 342 (2) Oriental Mythology
- Economics
  - 330 (3) Economic Development
  - *332 (3) Economics of Asia
  - 530 (3) Advanced Economic Development
  - *532 (3) Economic Problems of Asia
- Geography
  - 120 (3) Geography and World Affairs
  - *470 (3) Asia
  - *502R (2 ea.) Seminar in Regional Geography
- History
  - *340 (3) Premodern Asia
  - *341 (3) Modern Asia
  - *342 (3) Korea
  - *343 (3) Formative Period of Chinese Civilization
  - *344 (3) Modern China
  - *345 (3) Premodern Japan
  - *346 (3) Modern Japan
  - *347 (3) South Asia
  - *348 (3) Southeast Asia
  - 349 (3) Asiatic Russia
  - *440 (3) Communist China
  - *445 (3) History of Asian Religions and Thought
  - 640R (3 ea.) Problems of Asian History
  - 648R (3 ea.) Asian Thought and Culture
  - 690R (3 ea.) Graduate Seminar in History (Asia)

- Language
  - Chinese (Mandarin)
    - 101, 102 (4 ea.) First-Year Mandarin
    - 201 (4) Intermediate Modern Chinese 1
    - 211 (2) Second-Year Conversation
    - 301 (4) Intermediate Modern Chinese 2
    - 311 (2) Third-Year Conversation
    - 321, 322, (3 ea.) Selected Readings and Composition
    - *342R (3 ea.) Chinese Literature in Translation
    - 441, 442 (4 ea.) Classical and Documentary Chinese
    - 443 (4) Modern Chinese Literature
    - 444 (4) Readings in Chinese Social Sciences
    - 445 (3) Chinese Civilization
    - 490R (1-3 ea.) Individual Study in Chinese
    - 495 (2) Senior Seminar for Majors
    - 521R (3 ea.) Seminar for Chinese Literature for Asian Specialists
    - 590R (1-3 ea.) Individual Study in Chinese
  - Japanese
    - 101, 102 (4 ea.) First-Year Japanese
    - 201 (4) Second-Year Japanese
    - 211 (2) Second-Year Conversation
    - 301 (4) Introduction to Japanese Literature
    - 311 (2) Third-Year Conversation
    - 321, 322 (3 ea.) Selected Readings and Composition
    - *343R (3 ea.) Japanese Literature in Translation
    - 443, 444 (3 ea.) Modern Japanese Literature
    - 445 (3) Japanese Civilization
    - 490R (1-3 ea.) Individual Study in Japanese
    - 495 (2) Senior Seminar for Majors
    - 521R (3 ea.) Seminar for Japanese Literature for Asian Specialists
    - 590R (1-3 ea.) Individual Study in Japanese
  - Korean
    - 101, 102 (4 ea.) First-Year Korean
    - 201 (4) Second-Year Korean
    - 211 (2) Second-Year Conversation
    - 311 (2) Third-Year Conversation
    - 340 (4) Introduction to Korean Literature

- Political Science
  - 150 (3) Comparative Government and Politics
  - 170 (3) Introduction to International Politics
  - *350 (3) Political Systems of the USSR and Eastern Europe
  - *352 (3) Ethnic and Class Conflict
  - *353 (3) Government and Politics of China and Southeast Asia
  - *354 (3) Government and Politics of Japan and Korea
  - *359R (3 ea.) Topics in Comparative Government and Politics
  - *384R (3 ea.) Foreign and International Relations
  - 501R (3 ea.) Advanced Topics (when taken in conjunction with an Asian class)
  - 505 (3) Asian Political Thought
  - 695R (1-3 ea.) Seminar in Comparative Government and Politics
  - 697R (1-3 ea.) Seminar in International Relations (Asia)

- Religion
  - *351 (2) Mormonism and the World's Religions
  - 555, 556 (2 ea.) Comparative World Religions
- Russian
  - 490R (1-3 ea.) Individual Study in Russian

Asian Studies Courses

101. Introduction to Asia. (3:3:0) (G-SS)
Topical introduction to Asian culture and civilization: geography, history, politics and government, religion and thought, anthropology, art, and literature.

240. (Asian-Hum.) Introduction to the Humanities of Asia. (3:3:0) (G-HA)
The major arts of Asian cultures in their historical, religious, and philosophical settings.

342. (Asian-Hum.) Oriental Mythology (2:0:0)
Discussions of the myths, legends, and folkloric traditions in Oriental cultures.

499. Senior Seminar in Asian Studies. (3:3:0) Required of all Asian majors in the senior year.
Sources, materials, and methods of research and writing, including critical analysis of research project .

501. Intensive Introduction to Asian Studies for Teachers. (3:3:0)
Readings, lectures, and individual study to assist public school teachers to integrate Asian studies into the curriculum of social studies, world history, and geography. To A.D. 1600.

502. Intensive Introduction to Asian Studies for Teachers. (3:3:0)
Readings, lectures, and individual study to assist public school teachers to integrate Asian studies into the curriculum of social studies, world history, and geography. Since A.D. 1600.

521R. Seminar in Chinese Literature for Asian Specialists. (3:3:0 ea.)
Advanced study of selected works.

European Studies

Executive Committee: Douglas F. Tobler (Coordinator, 236 KMH), Edwin B. Morrell, L. Gary Lambert, John B. Harris.

Undergraduate Program

European Studies is designed to prepare students for careers and advanced study which require a broad understanding of modern and contemporary Europe. It offers the breadth of related interdepartmental study in combination with the depth of training usually taken in one department. The program offers the B.A. degree for students contemplating careers in teaching, academic research, law, business, government services, or for those desiring a good liberal arts education.

Students in the European Studies Program may combine a major in a regular academic discipline with a broader study of European culture, history, literature, politics, geography, economics, or, depending on professional plans, they may also have European Studies as a single major. They also acquire a working competency in one (or more) of the languages of Europe: French, German, Italian, Russian, a Scandinavian language, and Spanish. If desired, a single country or area of specialization within the program may be designated, such as European Studies—Russia.

Students may enter the program by consulting with the coordinator and should register each semester thereafter under his direction.

Requirements for a Major

A total of 28 hours (in addition to 12 hours of French, German, Italian, Russian, Scandinavian, or Spanish language instruction, which is the B.A. degree language-option requirement) divided as follows:

1. Core courses, starred in the list below, from three fields outside the departmental major .... 14 hrs.
2. Elective courses, any in the list below outside the departmental major, including for nonlanguage majors an additional 7 hours (making a total of 19) in their language and literature of emphasis .... 14 hrs.

Requirements for a Minor

A total of 17 hours (in addition to a regular major and 12 hours of one of the listed European languages, equivalent to the bachelor's degree requirement) divided as follows:

1. Core courses (starred) chosen from two fields outside the departmental major rule..................... 12 hrs.
2. Elective courses, including 2 additional hours of language study rule .... 5 hrs.

Graduate Program

Program. Master of Arts (M.A.)

Entrance Examination Required. None.

Application Consideration Date. Same as Graduate School deadlines.

Entry Times. Any regular registration.

Master of Arts

Prerequisites. Proficiency in one European language; strong undergraduate preparation in European Studies.

Field. European Studies.

Minors Permissible. Any approved minor

Requirements. The Master of Arts candidate will—

1. Complete at least 24 hours course work which must include 15 hours of European area courses at the graduate level, and two seminars in the European area.
2. Complete 6 hours of thesis credit when preparing a thesis on a European subject that is acceptable.
3. Meet language competency, consisting of the ability to use primary source documents in at least one language.

List of Courses

Art and Design
406 (3) Italian Renaissance Art
407 (3) Northern Renaissance
408 (3) Baroque Art
*411 (3) Nineteenth-Century European Art
*412 (3) Contemporary Art

Comparative Literature
310 (3) Introduction to Literary Analysis and Comparative Literature
340R (3 ea.) Russian Literature in Translation
341R (3) Masterpieces of German Literature in Translation
344R (3) Masterpieces of Scandinavian Literature in Translation
355 (3) Introduction to European Literature 1
356 (3) Introduction to European Literature 2
420R (3 ea.) Studies in Periods and Movements
430R (3 ea.) Studies in Literary Genres
440R (3 ea.) Studies in Themes and Types
450R (3 ea.) Studies in Literary Relations

Economics
315 (3) History of Economic Thought
331 (3) Economics of the Soviet Union and Eastern Europe
334 (3) Economics of Western Europe
*341 (3) Comparative Economic Systems
358 (3) International Trade and Finance
531 (3) Economic Problems of Soviet Union and Eastern Europe
534 (3) Economic Problems of Western Europe
535R (3 ea.) Economic Problems of Selected Areas (Soviet Union, Eastern Europe, Western Europe)
541 (3) Advanced Comparative Economic Systems
595R (1-3 ea.) Lectures in Economics (European)

English
270 (3) Masterpieces of English Literature
301 (4) Early Masters of English Literature
302 (4) Later Masters of English Literature
332 (3) The Early English Novel
333 (3) The Later English Novel
338 (3) The European Novel
341 (3) English Drama
371 (3) English Literature to 1500: The Medieval Period
372 (3) English Literature from 1500 to 1660: The Renaissance Period
373 (3) English Literature from 1660 to 1780. The Classical Period
374 (3) English Literature from 1780 to 1832. The Romantic Period
*375 (3) English Literature from 1832 to 1890 The Victorian Period
*376 (3) English Literature from 1890 to 1950
381 (3) Chaucer
382 (3) Shakespeare
383 (2) Milton
421 (3) History of the English Language
510R (1-3 ea.) Eminent English Writers
673 (3) Classicism in English Literature
674 (3) Romanticism in English Literature

675 (3) The Victorian Age in English Literature
676 (3) British Literature

French
440 (4) Historical Survey of French Literature
*441, 442 (3 ea.) Survey of French Literature and Culture
443 (3) French Literature of the Nineteenth Century
444 (3) French Literature of the Twentieth Century
445 (3) Introduction to French Civilization
645R (3 ea.) Studies in French Civilization
675R (3 ea.) Studies in Eighteenth-Century French Literature
680R (3 ea.) Studies in Nineteenth-Century Romantic and Post-Romantic Movements
685R (3 ea.) Studies in Twentieth-Century Pre- and Post-World War II Movements

Geography
120 (3) Geography and World Affairs
301 (2) Introduction to Cultural Geography (Section on Europe)
441 (3) Political Geography
*460 (3) Europe
*465 (3) USSR and Its Satellites

German
341R (3 ea.) Masterpieces of German Literature in Translation
401 (3) Cultural History of German-Speaking Peoples
*440 (4) Survey of German Literature and Culture
441 (3) German Literature from the Beginning to 1700
442 (3) German Literature in the Eighteenth Century
443 (3) German Literature in the Nineteenth Century
*444 (3) German Literature in the Twentieth Century
641 (3) German Poetry
642 (3) German Drama
643 (3) The German Novel to 1945
689 (3) Contemporary German Literature
690R (1-3 ea.) Special Studies in German

History
310 (3) The Early Middle Ages
311 (3) The Late Middle Ages
312 (3) The Renaissance: Age of Transition
313 (3) The Reformation: Age of Turmoil
320 (3) The Age of Enlightenment
*322 (3) Nineteenth-Century Europe
*323 (3) Europe in the Twentieth Century
326 (3) Western Civilization 1 (Travel Study)
327 (3) Western Civilization 2 (Travel Study)
*329 (3) The Austrian Empire and Eastern Europe
*330 (3) Tsarist Russia
*331 (3) The USSR and Eastern Europe
*332 (3) France
*333 (3) Modern Germany
*334 (3) Spain
*335 (3) England
412 (3) Medieval Institutions
415 (3) Expansion of Europe
424 (2) European Diplomatic History to 1815
425 (2) European Diplomatic History since 1815
429 (3) European Intellectual History since the Enlightenment
*433 (2) Twentieth-Century Germany: Hitler and Beyond
435 (3) Constitutional Foundations of English History
498 (1-2) Directed Readings (European History)
618 (3) Renaissance Problems and Thought
619 (3) Reformation Problems and Thought
621 (3) Problems in Modern Europe
625 (3) Problems in European Diplomacy since 1815
628 (3) European Thought and Culture of the Enlightenment
629 (3) European Thought and Culture since 1800
631 (3) Problems in Russian History
690R (1-3 ea.) Graduate Seminar in History

Humanities and Comparative Literature
202 (3) The Arts in Western Culture: Late Renaissance to the Modern Age
401 (3) Cultural History of Scandinavia
602 (3) The Arts in Historical Context: Late Renaissance through the Modern Age

Italian
*440 (4) Survey of Italian Literature
445 (3) Introduction to Italian Civilization
460 (3) The Age of Dante
465 (3) Italian Literature of the Renaissance
470 (3) Italian Literature of the Romantic Period
*485 (3) Italian Literature of the Twentieth Century

Music
103 (2) Survey of Music Literature
471 (3) Introduction to Counterpoint
484, 485 (3 ea.) History of Music
566R (2 ea.) Applied Music Literature
633 (2) History of Musical Style
634 (3) History of Musical Style
640 (3) Music in the Romantic Period
675 (3) Music of the Contemporary Period

Philosophy
221 (3) Ancient and Medieval Origins of Western Philosophy
222 (3) The Emergence of Modern Philosophy
371R (2-5 ea.) Topics in Philosophy (European)
372R (2-5 ea.) Figures in Philosophy (European)
373R (2-5 ea.) Historical Movements in Philosophy (European)

Political Science
150 (3) Comparative Government and Politics
305 (3) Western Political Heritage—Modern
309R (3 ea.) Topics in Political Philosophy (European)
*350R (3 ea.) Communist and Totalitarian Government and Politics (Soviet Union, Eastern Europe)
*351R (3 ea.) Parliamentary Government and Politics (France, Germany, United Kingdom)
359R (3 ea.) Topics in Comparative Government and Politics (European)
368 (3) Anglo-American Legal Institutions
*377R (3 ea.) Foreign Relations (Soviet Union)
*378R (3 ea.) International Systems (Western Europe, Communist World)
379R (3 ea.) Topics in International Relations (European)
498R (1-2 ea.) Directed Individual Study (European Politics)
697R (1-3 ea.) Seminar in International Relations
695R (1-3 ea.) Seminar in Comparative Government and Politics

Portuguese
522 (2) History of the Portuguese Language
642 (3) Contemporary Portuguese Literature

Religious Instruction—Church History and Doctrine
352 (2) Mormonism and the Christian Tradition

Russian
340R (3 ea.) Russian Literature Translation
345 (3) Cultural History of Russia
440 (2) Survey of Russian Literature from the Beginning through the Eighteenth Century
*441 (3) Survey of Russian Literature in the Nineteenth Century
*442 (3) Survey of Russian Literature in the Twentieth Century

Scandinavian
344R (3 ea.) Masterpieces of Scandinavian Literature in Translation
401 (3) Cultural History of Scandinavia
*441 (4) Dano-Norwegian Literature
*445 (4) Swedish Literature
*447 (4) Finnish Literature
490R (1-3 ea.) Individual Study in Scandinavian
594R (3 ea.) Seminar in Scandinavian Studies

Spanish
345R (3 ea.) Contemporary Culture
*441 (4) Survey of Spanish Literature
*445 (2) Iberian Civilization
470R (3 ea.) Golden Age Literature
485 (3) Introduction to Contemporary Spanish Literature
685R (2 ea.) Twentieth-Century Literature
670R (3 ea.) Golden Age Literature

European Studies Course

***336R. European Studies.** (5:5:Arr. ea.)
Social science core course approved for Study Abroad Programs in London, Madrid, Paris, and Salzburg.

*Students participating in the European Study Abroad programs will be able to apply virtually all of the courses taken there to a European Studies major or minor.

International Relations

Executive Committee: Richard S. Beal (Coordinator, 239 KMH), F. LaMond Tullis, Ray C. Hillam, Robert E. Riggs.
Professors: Farnsworth, Hickman, Hillam, Mabey, Riggs, Tullis.
Associate Professors: Morrell, Taylor.
Assistant Professors: Beal, Bohn.

Undergraduate Program

International Relations is one of the programs in the World Affairs Center. This program is to assist students at Brigham Young University to learn ". . . things which are abroad; the wars and the perplexities of nations . . . and a knowledge also of countries and of kingdoms." (D.C. 88:79.) It is an interdisciplinary program designed to provide students with information about contemporary world affairs. The principal objective is to acquaint students with alternative approaches to the study of international relations. The idea is to prepare major students for a career in a number of different international areas and/or for advanced study in international relations. To accomplish these ends, students must be able to integrate information about global matters from many diverse academic disciplines such as anthropology, psychology, sociology, geography, history, economics, political science, languages and intercultural affairs, business, and organizational behavior.

Each student should review his or her career objectives with the coordinator of the International Relations Program and prepare a proposed major outline (forms are available from the World Affairs Center secretary). This outline will be evaluated by the International Relations Advisory Group, and a particular option will be approved at that time for the student.

Requirements for a Major

Concurrent Major Option 1 (Concurrent Major). The Concurrent Major Option requires that students satisfy the major requirements in international relations—30 semester hours and the conversational language requirement—together with the requirements of some other major in the University. Generally this results in a total of 76 independent credit hours. "Independent" credit hours may not be doubly counted in both majors. This option is especially appropriate for studying international relations but necessitates careful planning to accomplish.

The Concurrent Option is recommended for students who anticipate advanced academic training, law school, the foreign service, or some technical careers in international business or economics.

IR Major and Skill Minor Option 2 (Major/Skills Minor). This Major/Skills Minor Option requires 30 hours in international relations, the conversational language competency, and 15 hours of a skill-oriented minor. The skills minor might be research techniques, including computer science and statistics, economics, accounting, international banking, regional planning, health care, management, third and fourth languages, intercultural affairs, TESL, education, and many others.

The Major/Skills Minor Option is recommended for students who want to develop specific interdisciplinary skills that prepare them for selected careers or specialized advanced training.

International Relations Major Option 3 (Single Major). The Single Major Option consists of 30 semester hours in international relations and the language requirement.

This option is recommended for students who are primarily interested in a truly liberal arts undergraduate education with an emphasis on world affairs.

Language Requirement. Every international relations major must satisfy the conversational competence language requirement regardless of the particular IR major option he or she selects. The language requirement may be satisfied in one of three different ways: (1) passing 16 hours of a single modern language; (2) passing a 300-level language course requiring conversational ability; or, (3) providing some other academic evidence of conversational fluency.

Students satisfying this requirement by taking 16 credit hours should remember that it is 16 hours in **one** language and not 8 hours in one language and another 8 hours in some other language.

Requirements for a Major

The program requires 30 hours, as described below, plus 16 hours (or the equivalent) of a modern foreign language.

Required Courses

Political Science
170 Introduction to International Politics
300 Political Inquiry
370 Theory of International Relations
375 International Organizations

International Relations
499 Senior Seminar in International Relations

Elective Courses

Fifteen hours chosen from among the courses listed below, drawn from at least three areas other than the departmental major.

Required Courses for a Minor

Political Science
170 Introduction to International Politics
370 Theory of International Relations

Elective Courses

Nine hours chosen from among the courses listed below, or alternative courses approved by the coordinator.

Graduate Program

Program. Master of Arts (M.A.).

Entrance Examination Required. None.

Application Consideration Date. Same as Graduate School deadlines

Entry Times. Any regular registration.

Master of Arts

Prerequisites. Background in world affairs generally and/or an undergraduate degree in one of the social or behavioral sciences, with proficiency in one modern language.

Field. International relations.

Minors Permissible. Any approved minor

Requirements. The Master of Arts candidate will—

1. Be required to complete a minimum of 24 graduate (or approved) semester hours The 24 hours must be

distributed in five areas: (a) theory and methods in international relations, (b) international organization/law/integration, (c) foreign relations policy, (d) comparative political systems, and (e) area studies and/or substantive specializations. These five areas constitute the core in the master's degree.

2. Be permitted to commence work on his or her thesis if the written and oral exams in each of the four core areas are passed. Standard bibliographies for each of the core areas are available from the secretary of the World Affairs Center. Students may not receive any 699 thesis credit until they have successfully passed these area examinations.
3. Submit a thesis to demonstrate that he or she has acquired the necessary skills and background to conduct independent research projects. Projects may, subject to approval, be submitted in lieu of a thesis, but such approval will depend on the student's area of concentration and career objectives.
4. Be required to meet language competency, consisting of the ability to use primary source documents in at least one foreign language or conversational fluency (16 undergraduate semester hours in one language).

Course Work. Students wishing to apply 300-level or 400-level courses towards a master's degree should notify the secretary of the World Affairs Center so that notification can be sent to the respective faculty that they might assign and expect graduate level work in these 300- and 400-level courses.

Anthropology
- 105 (3) Introduction to Social Anthropology
- 330 (3) People of Africa
- 340 (3) Peoples of the Mideast
- 350 (3) Peoples of South and East Asia
- 432 (3) Political and Legal Institutions—Primitive Peoples
- 433 (3) Economic Institutions

Asian Studies
- 101 (3) Introduction to Asia
- 499 (3) Senior Seminar in Asian Studies

Business Management
- 430 (3) Introduction to International Business
- 431 (3) International Marketing
- 432 (3) International Corporate Finance

Communications
- 580 (2) Comparative World Communication Systems
- 581 (2) International Communication Problems

Economics
- 330 (3) Economic Development
- 331 (3) Economics of the Soviet Union and Eastern Europe
- 332 (3) Economics of Asia
- 334 (3) Economics of Western Europe
- 341 (3) Economics of Capitalism, Socialism, and Communism
- 345 (3) Resource Economics: Energy and Environment
- 358 (3) International Trade and Finance
- 390 (3) Natural Resource Economics
- 531 (3) Economic Problems of the Soviet Union and Eastern Europe
- 532 (3) Economic Problems of Asia
- 534 (3) Economic Problems of Western Europe
- 541 (3) Advanced Comparative Economic Systems
- 558 (3) Theory of International Trade and Finance

Geography
- 120 (3) Geography and World Affairs
- 231 (3) Economic Geography
- 332 (2) Resource Management
- 441 (3) Political Geography
- 450 (3) North America
- 455 (3) Latin America
- 460 (3) Europe
- 465 (3) USSR and Its Satellites
- 470 (3) Asia
- 480 (2) Australia and New Zealand
- 580 (2) Geography of Underdeveloped Areas

History
- 322 (3) Nineteenth-Century Europe
- 323 (3) Europe in the Twentieth Century
- 329 (3) The Austrian Empire and Eastern Europe
- 331 (3) The USSR and Eastern Europe
- 332 (3) France
- 333 (3) Modern Germany
- 334 (3) Spain
- 335 (3) England
- 341 (3) Modern Asia
- 342 (3) Korea
- 344 (3) Modern China
- 346 (3) Modern Japan
- 347 (3) South Asia
- 348 (3) Southeast Asia
- 352 (3) History of Latin America 2
- 424 (2) European Diplomatic History to 1815
- 425 (2) War, Revolution, and Peace in the Modern World
- 429 (3) European Intellectual History since the Enlightenment
- 433 (3) Twentieth-Century Germany: Hitler and Beyond
- 440 (3) Communist China
- 453 (3) Mexico and the Caribbean
- 454 (3) Argentina, Brazil, and Chile
- 455 (3) Northern South America
- 459 (3) Inter-American Relations
- 474 (3) U.S. Diplomatic History
- 475 (3) Military History
- 488 (3) Historiography
- 490 (3) Historical Research and Writing
- 621 (3) Problems in Modern Europe
- 625 (3) Problems in European Diplomacy since 1815

Language and Literature (no more than 5 hours from the following list)

Comparative Literature
- 340R (3 ea.) Russian Literature in Translation
- 341R (3 ea.) Masterpieces of German Literature in Translation
- 342R (3 ea.) Chinese Literature in Translation
- 343R (3 ea.) Japanese Literature in Translation
- 344R (3) Masterpieces in Scandinavian Literature
- 355, 356 (3 ea.) Introduction to European Literature 1, 2

English
- 338 (3) European Novel
- 355 (3) Introduction to European Literature 1
- 356 (3) Introduction to European Literature 2
- 666 (3) American Literature, 1900-1950
- 676 (3) British Literature, 1900-1950

Humanities
- 240 (3) Introduction to the Humanities of Asia
- 401 (3) Cultural History of Scandinavia

Chinese
- 342R (3 ea.) Chinese Literature in Translation
- 443 (4) Modern Chinese Literature
- 444 (4) Readings in Chinese Social Sciences
- 445 (3) Chinese Civilization
- 521R (3) Seminar in Chinese Literature for Asian Specialists

Japanese
- 343R (3 ea.) Japanese Literature in Translation
- 443 (3) Modern Japanese Literature
- 445 (3) Japanese Civilization
- 521R (3) Seminar in Japanese Literature for Asian Specialists

Korean
- 340 (4) Introduction to Korean Literature

Russian
- 340R (3 ea.) Russian Literature in Translation
- 440 (2) Survey of Russian Literature from the Beginning through the Eighteenth Century
- 441 (3) Survey of Russian Literature in the Nineteenth Century

442 (3) Survey of Russian Literature in the Twentieth Century

French
301 (3) Introduction to French Literature
345 (3) Contemporary Culture
440 (4) Historical Survey of French Literature
441, 442 (3 ea.) Survey of French Literature and Culture
444 (3) French Literature of the Twentieth Century
445 (3) Introduction to French Civilization

Italian
301 (3) Introduction to Italian Literature
440 (4) Survey of Italian Literature
445 (3) Introduction to Italian Civilization
485 (3) Italian Literature of the Twentieth Century

Dutch
340 (4) Introduction to Dutch Literature

German
341R (3 ea.) Masterpieces of German Literature in Translation
401 (3) Cultural History of German-Speaking Peoples
440 (4) Survey of German Literature and Culture
444 (4) German Literature in the Twentieth Century

Portuguese
441 (4) Survey of Portuguese Literature
445 (2) Iberian Culture
451 (4) Survey of Brazilian Literature
455 (2) Ibero-American Civilization
553 (2) O Modernismo
642 (3) Contemporary Portuguese Literature
651 (3) Contemporary Brazilian Literature

Scandinavian
344R (3 ea.) Masterpieces of Scandinavian Literature
401 (3) Cultural History of Scandinavia
441 (4) Dano-Norwegian Literature
445 (4) Swedish Literature
447 (4) Finnish Literature
594R (3) Seminar in Scandinavian Studies

Spanish
301 (4) Introduction to Spanish Literature
441 (4) Survey of Spanish Literature
445 (2) Iberian Civilization
451 (4) Survey of Hispanic-American Literature
453 (2) Chicano Culture
454 (3) Hispanic-American Novel
455 (2) Ibero-American Culture
485 (3) Introduction to Contemporary Spanish Literature
553 (3) Spanish-Speaking American (Chicano) Literature

Latin American Studies
495 (3) Senior Seminar in Latin American Studies

Politicsl Science
150 (3) Comparative Government and Politics
303 (3) Empirical Political Theory
306 (3) Asian Political Thought
350 (3) Political Systems of the USSR and Eastern Europe
351 (3) British Government and Politics
352 (3) Ethnic and Class Conflict
353 (3) Government and Politics of China and Southeast Asia
354 (3) Government and Politics of Japan and Korea
355 (3) Canadian Government and Politics
356 (3) French, German, and Italian Government and Politics
357 (3) Political Systems of the Middle East
358 (3) Politics and Society in Latin America
359R (3 ea.) Topics in Comparative Government and Politics
371 (3) International Behavior
373 (3) International Law
374 (3) Regional Integration
375 (3) International Organizations
378 (3) International Relations of Latin America
379R (3 ea.) Advanced Studies in International Relations
381 (3) U.S. Foreign Policy
382 (3) Foreign Policy Analysis
383 (3) Soviet Foreign Relations
384R (3 ea.) Foreign and International Relations
386 (3) World Communism
695R (1-3 ea.) Seminar in Comparative Government and Politics
697R (1-3 ea.) Seminar in International Relations

Psychology
350 (3) Introduction to Social Psychology
369 (3) Psychological Methods
373 (4) Research Methods 1
374 (3) Research Methods 2
570 (3) Computer Use in the Behavioral Sciences

Sociology
205 (3) Applied Social Statistics
245 (3) World Populations
300 (3) Methods of Research in Sociology
350 (3) Introduction to Social Psychology
522 (3) Social Stratification
623 (3) Seminar in Race and Ethnic Relations

Statistics
221 (3-4) Principles of Statistics
501 (5) Statistics for Research Workers 1
502 (5) Statistics for Research Workers 2

International Relations Course

499. Senior Seminar in International Relations. (3:3:0) (G-SS) Prerequisite: senior standing and near completion of major.

Research and writing for senior students majoring in international relations. Designed to integrate the broad field of international relations.

Youth Leadership

Professor: Packer (Chairman, 105 RB).
Associate Professor: Skinner.
Instructors: Catherall, Cloward, Nelson.

Undergraduate Program

The Department of Youth Leadership offers a Bachelor of Science degree designed to prepare men and women for career employment with youth-serving agencies that generally do not require certification through the public school systems. Teaching skills are important to the career youth leader, but of equal importance are administrative and leadership talents as they can be applied to youth and adults. Youth leadership requires a blend of instructional and leadership skills.

Because the programs of many youth organizations take advantage of an outdoor environment, the department curriculum has a strong outdoor education orientation. Courses in this emphasis teach the use of the outdoors as a laboratory to enrich aesthetic and spiritual experiences for youth and to improve and enlarge personal value systems.

In addition to professional preparation, the department provides courses that train for community and church youth leadership on a volunteer level.

Major in Youth Leadership

The student may choose a program leading to a Bachelor of Science in youth leadership by selecting from two areas of emphasis, agency or outdoor education. Each suggests a core program and each offers a special arrangement of courses (called tracks) which are flexible. Courses selected for the track may vary according to the special needs or interests of the student and are determined by consultation between the student and a faculty adviser. Courses within a track may be selected from other departments but should pursue a well-defined objective appropriate to youth leadership.

Agency emphasis majors may anticipate employment by such national youth organizations as the Boy Scouts of America, the Girl Scouts of the United States, the YMCA and YWCA, Campfire Girls, Boys Club of America, etc. Over 100 youth-serving agencies in America have nationwide coverage and employ administrative and program specialists. In addition, thousands of private organizations and corporations, a large number of public and quasi-public institutions, and many government agencies conduct programs which require youth leadership competencies. Initial employment with many of the agencies may be secured with a bachelor's degree.

Outdoor education emphasis majors are encouraged to seek advanced degrees in the social sciences dealing with social adjustment and affective value changes in people. Opportunities for employment with only a bachelor's degree in this emphasis are more paraprofessional and seasonal and require instructional and program skills more than executive leadership. A bachelor's degree in either emphasis may be completed in four years, or, if the student can take advantage of the Spring and Summer Terms, in three years.

Cooperative education experiences are important and are encouraged through courses which are included in both emphases (see course description of YthLdr. 373, 399R, 401R, 402R, 412, and 599R.). Through assistance from department counselors, financial honorariums as well as college credit can sometimes be secured for these experiences.

Recommendations for General Education Requirements

Refer to the general education programs section of this catalog for a list of requirements. A student is urged to counsel with a department adviser in selecting general education courses which support the special professional needs of youth leaders or of the individual student.

Outdoor Education Emphasis
Required Core Courses

YthLdr. 278, 301, 370, 332, 378, 380, 381, 382, 401R (2 hours), 402R (4 hours), 412, 492, InSci. 455 or OrgB. 358. Total: 30 credit hours.

Optional Tracks

Behavioral Science Track—Outdoor Education Emphasis

Students who wish to pursue this track are encouraged to project advanced degree work. An approved minor in a discipline related to youth leadership is required. The following minors in other departments are recommended for youth leadership majors who select this emphasis. See separate department descriptions for courses required for these minors:

Recreation	14 hours (approximately)
Psychology	19 hours (approximately)
Sociology	15 hours (approximately)
CDFR	14 hours (approximately)
Elementary Education	20 hours (approximately)

Note: Other minors for this track or a special program of preparation of approximately 16 hours may be projected with approval of a department faculty adviser.

Agency Track—Outdoor Education Emphasis

Students pursuing this track may more appropriately expect only seasonal employment upon graduation.

YthLdr. 301, 344, 371, 372R, 373, 375, 402R

Recommended electives:

Anthro. 317, Archaeol. 415, CDFR 430, Psych. 332 and 351, Comms. 211, Zool. 250, Geol. 104, YthLdr. 366, 401R, Bot. 351 and 352 (3 credit hours)

Agency Emphasis
Required Core Courses

YthLdr. 278, 301, 305, 332, 344, 370, 371, 373, 375, 378, 401R, 402R, 412, 492. Total: 23 credit hours.

Optional Tracks

Scout Executive Track

Students who pursue this track will be preparing to become professional executives with the Boy Scouts of America or very skilled volunteer leaders in Scouting. The following courses or equivalent training is required: YthLdr. 372R (6 hours), 306, 312, 410, BusEd. 320R or OrgB. 358, BusEd. 305, InSci. 455. Total: 21 credit hours.

Agency Track

Students who pursue this track will be preparing for professional employment in a wide variety of youth-serving agencies and institutions. The following courses or equivalent training is required: YthLdr. 372, 381, 382, 402R; BusEd. 305, 320R; OrgB. 358, InSci. 455, RecEd. 371. Total: 21 credit hours.

Recommended electives

ThCA 121, 527; OrgB. 321; Psych. 322, 350; Health 121, 460; BusMgt. 241; CDFR 210; Comms. 211; YthLdr. 366; 401R (3 hours).

Minor in Youth Leadership

Students preferring the agency emphasis minor must register for YthLdr. 332, 344, 371, 375, 378, and other youth leadership courses totaling 16 hours.

Students preferring the outdoor education emphasis minor must register for YthLdr. 380, 381, 480, and other youth leadership courses totaling 16 hours.

Survival Instructor Certification

Majors and nonmajors who wish to certify as BYU Survival instructors may do so by—

1. Completing YthLdr. 480 and completing or successfully challenging YthLdr. 278, 370, 378, 380, 381, 382; RecEd. 233; OrgB. 358; Health 430, and Geog. 211.
2. Receiving certifying approval of performance in three of the following internship courses: 401R (480 leadership or equivalent), 402R (desert, alpine, arctic, and marine, or equivalents), and 402R (initiative practicum for at least 2 hours of credit)
3. Demonstrating superior performance as a field staff leader in BYU or non-BYU survival programs (YthLdr. 412—8 hours—or equivalent performance)
4. Successfully completing a comprehensive certifying examination

Courses

278. Trail Leadership. (1:1:2)
Elementary principles of backpacking, including cooking, safety, sanitation, and equipment.

279R. Moving Camps. (1:1:1 ea.) Prerequisite: YthLdr. 278 or consent of instructor.
Logistics and administration of moving camp-type programs providing tripcrafter certification by the American Camping Association. Offered Spring and Summer Terms.

301. Introduction to Youth Leadership. (1:1:0)
Career opportunities and development of appropriate baccalaureate programs for prospective youth leadership majors.

305. Developing Community Resources. (3:3:0)
Community financing of community service organizations, including independent campaigns, endowments, bequests, trust funds, etc.

306. Youth Agency Administrative Functions. (3:3:0)
Organizational and operational practices of youth agencies on the administrative level. Offered Winter Semester.

332. Community Relationships. (3:3:0) Home Study also.
Methods of directing community resources toward the needs of youth.

344. Youth Agencies and Organizations. (2:2:0) Home Study also.

impact of various youth-serving agencies on the culture of America.

366. Camp Aquatics. (2:2:2) Prerequisites: PE 166, 264 or 265, or consent of instructor.
Safety and skills necessary to conduct boating programs in organized youth camps with waterfronts. Aquatic safety, sailing, motorboating, water skiing, advanced canoeing, and river running.

370. Fundamentals of Contemporary Survival. (1:0:0)
Study and lab experience in activities correlated to potential survival emergencies.

371. Youth Meetings, Activities, and Conferences. (2:0:0) Home Study also.
Techniques of planning and organizing youth and other conferences related to youth agency service.

372R. Youth Agency Programming. (2:2:0 ea.) Home Study also.
Comparative study of related youth agency programs for preadolescents, early adolescents, and late adolescents.

373. Practicum in Volunteer Leadership. (2:1:5)
Participation with a youth-serving agency in a volunteer leadership capacity.

375. Executive Dynamics. (3:3:0)
Executive leadership and personal growth practices calculated to meet executive leadership demands.

378. Techniques of Outdoor Adventure. (2:2:3) Home Study also.
Advanced outdoor skills and camp program planning for youth leaders. American Camping Association certification possible.

380. Primitive Land Survival. (2:2:1)
Training to meet the adversity of primitive living without the use of modern equipment and facilities.

381. Teaching in the Outdoors. (2:2:0)
Development and use of outdoor teaching situations to achieve educational objectives.

382. Teaching in the Outdoors—Laboratory. (2:0:4)
Laboratory experience occasionally requiring overnight participation.

399R. Cooperative Education: Field Internship for Youth Leadership. (1-9:0:0 ea.) Prerequisite: consent of department chairman.
On-the-job experience in youth-serving organizations and agencies.

400. Keys to Leadership. (3:3:0)
An individualized experience designed to develop leadership skills through structured interaction and application of leadership principles

401R. Youth Agency Staff Training. (1:lecture and laboratory in organized camp for one week ea.) Prerequisite: consent of instructor.
Preparation for selected leadership assignments in agency summer camps and related programs.

402R. Outdoor Leadership Practicum. (2-4:0:4-8 weeks ea.) Prerequisite: consent of instructor.
Administrative experience in positions of staff leadership with selected youth agencies.

412. Executive Internship. (2-8:2:40) Prerequisite: completion of all other major requirements.
Laboratory experience requiring participation in off-campus administrative assignments.

480. Outdoor Survival. (3-5:5 per week/3 weeks: 70 per week/3 weeks)
A living experience course in physical and emotional stress situations designed to produce positive interpersonal commitments. Special fee required

492. Seminar. (1:1:0)

599R. Cooperative Education: Executive Internship for Youth Leaders. (1-8:0:8 ea.) Prerequisite: completion of major requirements or consent of instructor.
On-the-job experience.

Zoology

Professors: Allen, Allred, Andersen, Chapman, Frost, Heninger, Jaussi, Jorgensen (Chairman, 575 WIDB), Murphy, Tipton, Wood.
Associate Professors: Barnes, Booth, Braithwaite, Heckmann, Jeffrey, Miller, Rhees, Seegmiller, Simmons, Smith, Urry, White.
Assistant Professors: Allman, Black, Bradshaw, Farmer, Pritchett, Van DeGraaff, Whitehead.
Collaborators: Fullmer, Hayward, Phillips, Porter, Spofford, Taylor, Thompson, Tiernan, Ware, Whalcott, Wiser.

The Department of Zoology offers professional training leading to the degrees of Bachelor of Science (B.S.), Master of Science (M.S.), Master of Biological Education (M.S.), and Doctor of Philosophy (Ph.D.). Courses are offered in preprofessional training for (1) medicine, (2) dentistry, (3) optometry, (4) dental hygiene, and (5) pharmacy. Students planning to teach biology and general science in secondary schools and biology in junior colleges may also certify with a major in this department.

Students who major in zoology and demonstrate academic competence find numerous employment options open to them, ranging from technical work in research laboratories to field technicians for environmental research companies. Zoology students may develop expertise and interest in such diverse areas as cell chemistry, community health, disease transmission, endangered species preservation, evolution and speciation, fresh-water biology, human biology, marine biology, nutrition, organ transplants, pest control, population management, reproductive behavior, taxonomy, and wildlife management. In addition to the preprofessional options mentioned earlier, zoology majors often prepare themselves for graduate studies in almost all areas of biological research.

Students participate with faculty members in important research programs which include aquaculture; bark beetle biology and taxonomy (worldwide); biological impacts of pesticides and plasticides; fish diseases; fisheries biology; insect morphology and electro-physiology; parasitic diseases of returned missionaries; parasitic diseases of the western United States; raptor biology in Alaska, the western United States, and Greenland; and rodent biology in the western United States.

Student Advisement

Students electing to major in the Department of Zoology will be assigned an adviser by the department administrative assistant in 574 WIDB. To effect the most economical use of student time, courses of study in zoology and supporting fields should be selected by the students as quickly as possible after they declare themselves majors. Faculty advisers will assist students with problems concerning options within their major and with their academic and professional problems, as well as to generally help students obtain success while at the University. Other advisement may be obtained from: (1) the college advisement center (392 WIDB), which provides all the assistance necessary during registration, along with some information concerning possible options of study within the college; and (2) the Health Professions Advisement Office (391 WIDB), which may also provide help in determining which optional courses to take in satisfying preprofessional admissions requirements for specific professional schools in the fields of medicine, dentistry, optometry, dental hygiene, pharmacy, and veterinary science, along with information concerning the professional tests (MCAT, DAT, etc.)

Some of the options open to students in the Department of Zoology are—

Anatomy
Ecology and environmental biology
Genetics
Molecular and cellular biology
Preprofessional dentistry, medicine, optometry, dental hygiene, pharmacy, and veterinary science
Developmental biology

Entomology
Fisheries and wildlife biology
Marine and freshwater biology
Parasitology
Physiology
Secondary teaching composite
Systematics

Undergraduate Program

Professional Biology

Many students major in zoology to train for professional biology careers. Of the numerous courses offered, some are required of all majors to provide them with solid training in the fundamentals of biology; and some are elective, with adviser guidance, to prepare the student with specialized training in an area of interest that will allow him or her to competitively enter the job market directly or to enter graduate school programs for further training.

Courses required by the Department of Zoology for a B.S. degree are Zool. 114, 115, 202 or 203, 350, 374, 383, 460, and 474, plus two of the approved upper-division courses that provide an area of specialization. Some 500-level courses may be substituted for the second approved upper-division elective if it is approved by the appropriate zoology division prior to registration. In addition, Bot. 220, Micro. 331 or 321 and 322, Math. 110, and a chemistry series determined by the student's professional interests are required. Math. 112 or 119 and a one-year physics sequence are strongly recommended.

Preprofessional—Dentistry and Medicine

Students planning to apply to dental or medical schools should consult the Preprofessional Programs section of this catalog for minimum requirements. Additional requirements for the major in zoology are specified to make the applications as strong as possible and also to provide a professional biology major for graduate work if you are not accepted to dental or medical school. Students who have been accepted to dental, medical, or osteopathic schools may have Zool. 460 waived, provided equal semester hours of other adviser-approved, upper-division zoology credits have been earned.

Three-Year Predentistry and Premedicine Option. Some zoology students have the academic capability to satisfy the minimum preprofessional requirements with grades high enough to be accepted to dental, medical, or osteopathic school after only three years of preprofessional training. These students may transfer one year of professional school credit back to Brigham Young University and graduate with a B.S. degree from the Department of Zoology, providing the following requirements are satisfied at Brigham Young University or transferred from another college or university:

1. All general education and residence requirements
2. A minimum of 96 semester hours of credit from preprofessional schools
3. At least 20 semester hours of upper-division credit from preprofessional schools
4. Zool. 114, 115, 203, 374, 383.

Secondary Teaching—Composite Option

Students planning to teach biology or general science in the public school systems are required to complete the following composite of courses. If students enter this option late in their academic careers, substitutions with other courses are made on an individual course basis by the college coordinator.

Zool. 114, 115, 260 and 261 or 460, 331, 344, 350 and 374 or Bot. 372, Evolutionary Genetics
Bot. 105 Plant Kingdom
Bot. 205 Field Botany
Bot. 440 Plant Physiology
Micro. 321 General Microbiology
Micro. 322 General Microbiology Lab

Students should refer to the secondary teaching option advisement sheet for all nonbiology requirements in chemistry, geology, mathematics, physics, and education. These requirements are also found in the Education section of this catalog.

Minor Requirements

Although minors are not required, the Department of Zoology offers a rather flexible minor for those students requesting it. The following courses are required for an academic minor in the Department of Zoology:

Zool. 114, 115, 202, and 203

An additional 3 credit hours of upper-division zoology electives approved by the Department of Zoology must also be earned. Credit required for the student's major may not also be used to satisfy the requirements for a zoology minor. At least 3 credit hours in zoology must be taken at Brigham Young University to satisfy the minor requirements. Courses that cannot be used to satisfy the zoology minor are Zool. 321, 325, 329, 339, 342, 377, 429, 439, and 479.

Academic Requirements

Courses used to satisfy requirements for a major or minor in the Department of Zoology must be passed with a grade of C– or better. Refer to the general education programs section of this catalog for additional requirements.

Suggested Two-Year Course Sequences for Zoology Majors

The following course sequences are only suggestive and not mandatory, but they do represent logical sequencing in providing the most economical use of time at the University. These guides are intended particularly for freshmen who preregister at home without advisement and for early transfers from other institutions.

Professional and Preprofessional Biology Options

Freshman	**F**	**W**	**Sp/Su**
Chem. 105, 106		4	4
Math. 110	3	3	
Zool. 114, 115		4	
Zool. 202 or 203		4	

Sophomore	**F**	**W**	**Sp/Su**
Zool. 350		3	
Zool. 374		3	
Chem. 351, 352	3	3-5	

Preprofessional Option—Dentistry or Medicine

Freshman	**F**	**W**	**Sp/Su**
Chem. 105, 106		4	4
Math. 110	3	3	
Zool. 114, 115		4	

Sophomore	**F**	**W**	**Sp/Su**
Bot. 370		2	
Math. 109	4		
Physics 201*, 202*		4	4
Zool. 203	4		

*Some students may elect to take another physics sequence rather than 201 and 202.

Secondary Teaching—Composite Option

Freshman	**F**	**W**	**Sp/Su**
Bot. 105		3	
Chem. 102 and 103		6	
or			
Chem. 105 and 106		4	4
Math. 110	3		
Zool. 114, 115			4

Sophomore	**F**	**W**	**Sp/Su**
Bot. 205			3
Zool. 374		3	
Chem. 252	5		
or			
Chem. 281	3		
Chem. 281	3		
Geol. 101, 102		3	

Physics 137	3
Zool. 331	4

Some students are unable to attend school during the Spring and Summer Terms, and for them to progress at the same rate suggested by these sequences, it will be necessary to take more credit and schedule some courses out of suggested sequence. For some students this does not represent any particular problem, but most should follow the suggested sequencing to insure the best academic success. Once the major prerequisite courses have been completed, sequencing of the remainder is not as essential; thus, scheduling is more flexible.

Graduate Program

Programs. Master of Science (M.S.), Master of Biological Education (M.S.), Doctor of Philosophy (Ph.D.).

Entrance Examinations Required. Graduate Record Examination prior to consideration for admission and a departmental written examination during the first semester of resident study.

Application Consideration Dates. Prior to March 1 for Fall Semester and October 1 for Winter Semester.

Entry Times. Fall or Winter Semester.

Master of Science

Prerequisite. B.S. degree in zoology from an accredited college or university, or the equivalent.

Fields. Biological science education, entomology, genetics, zoology.

Minors Permissible. Any established minor in the biological or physical sciences: Option 2.

Requirements. Minimum of 30 semester hours including thesis (6-hr. min.—699R). Teaching assignment unless excused. (Consult graduate coordinator for modified requirements in biological science education).

Required Courses. Zool. 521; 696R during two semesters of resident study.

Doctor of Philosophy

Prerequisites. Master's degree in zoology or the equivalent. Option 2 for the two-language requirement or its equivalent may be met by completing 9 credit hours in computer science courses (131 and above), in mathematics (112 and above), in statistics (502 and above), or with a combination of 9 credit hours from these fields.

Fields. Entomology, genetics, zoology

Minors Permissible. Any established minor in the biological or physical sciences.

Requirements. Minimum of 24 semester hours plus dissertation (18-hr. min.—799R), plus one semester of off-campus study recommended unless M.S. is completed elsewhere. Teaching assignment unless excused.

Required Courses. Zool. 521; 696R during two semesters of resident study.

Courses

101. Introduction to Biological Science. (3:3:3) (G-BS)
For general college majors only.

114. Integrated Principles of Zoology. (3:3:0)
Emphasizes basic principles and history of zoology, and the major animal phyla, stressing diversity, structure, development, ecology, and behavior.

115. Integrated Principles of Zoology Laboratory. (1:0:2) Prerequisite: concurrent enrollment in Zool. 114.
Hands-on experience with some of the basic biological principles.

200. (Bio.Ag.--Micro.-Zool.) Principles of Biology. (3:3:0) (G-BS)
Introductory course for general education students.

201. Introduction to Biology. (4:5:0) Prerequisites: Chem. 105 and concurrent registration in Chem. 106.
Basic principles for majors and minors in biology.

202. Invertebrate Zoology. (4:3:4) (G-BS) Prerequisite: Zool. 115 or equivalent.
Functional morphology, taxonomy, ecology, and interrelationships of the invertebrates.

203. Vertebrate Zoology. (4:3:3) (G-BS) Prerequisite: Zool. 115 or equivalent.
Development, structure, classification, and natural history of the vertebrates.

205. Introduction to Human Biology. (4:4:0) (G-BS)
Metabolism, physiology of nervous system, endocrinology, reproduction, embryology, and genetics. For nonbiology majors. Carries CDFR credit for CDFR majors.

211. Biological Communications. (5:0:0)

229. Preview into Dentistry. (1:Arr.:Arr.)
Advantages and disadvantages of the dental profession. Application to and preparation for dental school. For freshmen and sophomores. Not acceptable for zoology major credit.

250. (Zool.-Bot.) Environmental Biology. (3:3:0) Home Study also. (G-BS)
Ecological concepts and the environmental impact of man. For nonbiology majors.

260. Elementary Human Anatomy. (3:2:2) (G-BS)
Primarily for students of physical education and physical therapy. Recommended for students of nursing. Not acceptable for zoology major credit.

261. Elementary Human Physiology. (4:3:2) (G-BS) Prerequisite: Chem. 102 or equivalent.
Primarily for students of physical education, physical therapy, nursing, and food science and nutrition. Not acceptable for zoology major credit.

276. (Zool.-Bot.) Heredity. (3:3:0) Home Study also. (G-BS) Prerequisite: Bot. 101 or 105, or Zool. 200 or equivalent.
Principles of inheritance for nonscience majors.

317. Human Parasitology. (3:2:3) (G-BS) Prerequisite: Zool. 115 or equivalent.

321. History and Philosophy of Biology. (2:2:0) Home study also. Prerequisite: a college course in one of the biological sciences.
Development of biological thought from the Grecian period to the present.

325. Biological Techniques. (2:0:3)
Techniques of preparing specimens and materials for demonstration and study.

329. Dental Techniques. (2:1:1) Prerequisite: Zool. 229.
Practical experience in the areas of dental anatomy, terminology, carving teeth, and dental operatory techniques. Not acceptable for zoology major credit.

331. Introductory Entomology. (4:2:4) (G-BS) Prerequisite: Zool. 115 or equivalent.
Structure, classification, and life histories of insects and selected arthropod relatives.

339. Preview into Medicine. (2:2:0)
Medical education (admission procedures, curriculum), medical specialties in practice, ethics, legal and governmental concerns, health delivery systems, and related professions. Not acceptable for zoology major credit.

344. Natural History of Wildlife. (4:2:4) (G-BS) Prerequisite: Zool. 203.

350. (Zool.-Bot.) Ecology. (3:3:0) Prerequisite: Zool. 115.
Basic principles, emphasizing range, forest, and wildland ecosystems.

351. Natural History for Elementary Teachers (3:3:0) Home Study also. (G-BS)

For nonbiology majors.

352. Field Studies in Natural History. (3:1:3) (G-BS) Prerequisite: Zool. 351.

Practical application and interpretation of contemporary problems and principles taught in Zool. 351. For nonbiology majors.

355. (Zool.-Psych.-Sociol.) Sociobiology. (3:3:0) (G-BS)

Animal and human group behavior emphasizing motivation, altruism, aggression, communication, and reproductive and parental behavior. Offered Winter Semester.

358. Ecology Laboratory. (1:0:3) Prerequisites: Range 350 or Zool. 350.

Laboratory and field work experience illustrating theory and application of basic ecological principles.

361. Applied Human Physiology. (4:3:2) Prerequisites: Chem. 102; completion of or concurrent registration in Chem. 281 and Zool. 260 and 261.

Advanced, applied physiology for nurses and allied health professionals. Not appropriate for premedical or predental studies. Not acceptable for zoology major credit.

363. Comparative Vertebrate Anatomy. (4:2:4) (G-BS) Prerequisite: Zool. 203.

364. Vertebrate Paleontology Methods. (3:2:2) (G-BS) Prerequisite: consent of instructor.

Collecting vertebrate fossils and interpreting conditions under which they lived. Form and function of the fossils will also be studied.

374. Genetics.(3:3:0) Prerequisite: Zool. 202 or 203.

General genetics with exception of eucaryotic gene regulation and population genetics, which are deferred to Zool. 383 and 474.

377. (Zool.-Bot.) Secondary Teaching Procedures in Biology. (3:3:1) Prerequisite: SecEd. 276.

For course description see SecEd. 376R. Required of biology teachers.

378. (Zool.-Bot.) Genetics Laboratory. (1:0:3) Prerequisite: Zool. 374.

380. Histology. (4:2:4) (G-BS) Prerequisite: Zool. 115 or equivalent.

381. Histological Techniques. (2:0:4)

383. Cellular and Developmental Biology. (3:2:3) Prerequisite: Zool. 374.

Integrated examination of biology at the cellular level; organelle structure and function; mechanisms of differentiation; specific cell types as models of regulatory processes.

409. Animal Systematics and Diversity. (2:2:0) (G-BS) Prerequisite: Zool. 202, 203.

Basic principles of animal diversity, classification, and nomenclature.

412. Introduction to Marine Biology. (3:3:0) Prerequisite: Zool. 202.

Marine life, the sea as an environment, and research methods.

417. Diseases of Fish and Wildlife. (3:2:1) (G-BS) Prerequisite: Zool. 115.

Basic course in diseases afflicting fish and wildlife, emphasizing diagnosis, pathogenesis, and epidemiology of each disease.

429. Clinical Observation for Predental Students. (2:1:3)

Experience in local dental offices for junior and senior predental students. Not acceptable for zoology major credit.

439. Clinical Observation for Premedical Students. (2:1:3) Prerequisite: junior or senior standing; special application required.

Observing with practicing physician and in hospitals. Not acceptable for zoology major credit.

455. Freshwater Biology. (3:2:3) Prerequisite: Zool. 350.

Biology of freshwater organisms, physical and chemical characteristics of fresh waters—lakes, streams, and reservoirs.

457. Wildlife and Fishery Management Techniques. (3:2:3) (G-BS) Prerequisite: Zool. 350.

460. Principles of Physiology. (4:4:3) Prerequisite: Zool. 115, 383, and one year of chemistry or equivalent.

General physiological principles and control of organ systems.

461. Mammalian Physiology. (3:3:3) Prerequisites: Zool. 460 or equivalent.

Function and regulation of organ systems in mammals.

474. Comparative Evolutionary Theory. (3:3:0) Prerequisite: all other courses in the zoology core or consent of instructor.

Organic evolution and its impact on modern thought.

476. Human Genetics. 3::3:0) Prerequisite: a course in genetics.

479. (Zool.-Bot.) Secondary Student Teaching. (4-8:0:20-40) Prerequisite: Zool. 377.

Required of biology teachers.

☐ **Geology 480. Introduction to Paleontology.** (3:2:2)

484. Human Embryology. (3:3:0) Prerequisites: Zool. 202 or 203.

Developmental milestones of prenatal life; etiology of congenital malformations, emphasizing cellular changes and their functional consequences.

☐ **Statistics 501. Statistics for Research Workers 1.** (5:4:3)

☐ **Microbiology 511. Immunology.** (2:2:0)

521. Zoological Literature. (2:2:0)

Techniques necessary for zoological research.

☐ **Botany 521. Electron Microscopy.** (2:2:0)

☐ **Botany 522. Biological Instrumentation.** (4:2:6)

526. (Zool.-Bot.) Cell Biology. (4:3:3) Prerequisite: Introductory course in biochemistry.

Molecular physiology and ultrastructure of cells, emphasizing eucaryotic organisms.

530. Insect Classification. (4:1:6) Prerequisite: Zool. 331.

531. Insect Physiology. (4:2:6) Prerequisites: Zool. 331; Chem. 252 or 351.

532. Insect Morphology. (4:2:4) Prerequisite: Zool. 331.

534. Economic Entomology. (3:2:2) Prerequisite: Zool. 331.

535. Medical Entomology. (3:2:2) Prerequisite: Zool. 331. Recommended: Micro. 331.

Arthropods and arachnids that affect the health of man and domestic animals.

536. Comparative Toxicology. (3:2:3) Prerequisites: general biology and a course in organic chemistry.

Modes of action and biological transformations of pesticides in living animals, plants, and the environment, emphasizing techniques.

538. Immature Insects. (2:0:4)

Offered alternate years.

543. Ichthyology. (2:2:2) Home Study also. Prerequisite: Zool. 203.

545. Herpetology. (2:1:2) Prerequisite: Zool. 203.

546. Ornithology. (2:1:2) Prerequisite: Zool. 203.

547. Mammalogy. (2:2:2) Prerequisite: Zool. 203.

549R. Advanced Topics in Zoology. (1-4:Arr.:Arr. ea.) Prerequisite: consent of instructor.
Topics vary.

551. Population Ecology. (3:2:2) Prerequisites: Zool. 350; completion of or concurrent registration in Stat. 501.
Offered alternate years.

552. (Zool.-Bot.) Terrestrial Ecosystems. (4:3:2) Prerequisites: Zool. 350; Stat. 221 or 501.
Biotic communities of the earth; population dynamics; reproductive, lifeform, and longevity patterns; species interactions; and structure, dynamics, and evolution of communities. Extended field trips.

555. (Zool.-Bot.) Aquatic Ecosystems. (3:2:3) Prerequisites: Zool.-Bot. 350 or equivalent, Stat. 221 or 501.
Analysis of lake and stream ecosystems. Three Saturday field trips and one extended field trip.

565. Endocrinology. (3:3:0) Prerequisite: Zool. 460 or equivalent.

566. Experimental Endocrinology. (2:0:6) Prerequisite: completion of or concurrent registration in Zool. 565.
Techniques used in research.

575. Biochemical Genetics. (3:3:0) Prerequisite: Zool. 383 or consent of instructor or equivalent. Emphasizes eucaryotic organisms.
Offered Winter Semester.

☐ **Geology 580, 581. Invertebrate Paleontology.** (4:3:2 ea.)

583. Etiology and Pathology of Brain Injury. (3:3:0) Prerequisite: consent of instructor.
May not be used for credit toward a major in zoology.

584. Neurology. (3:2:2) Prerequisite: consent of instructor.

585. Regulatory Mechanisms of Development. (3:3:0) Prerequisite: Zool. 383 or consent of instructor.
Molecular and cellular analysis of selected biological systems, emphasizing the processes which control cell differentiation.

586. Vertebrate Paleontology.(4:3:2) Prerequisite: Zool. 203.
Comprehensive study of vertebrates through time; their characteristics, interrelationships, environments under which they lived, and how they adapted.

591R. Special Problems in Zoology. (1-2:Arr.:Arr. ea.) Prerequisite: consent of instructor.

601. Zoogeography. (2:2:0)
Offered alternate years.

609. Systematic Zoology. (2:1:2)
Offered alternate years.

☐ **Microbiology 611. Advanced Immunology.** (2:2:0)

612. Advanced Invertebrate Zoology 1. (3:2:3) Prerequisite: Zool. 202 or consent of instructor.
Comprehensive biology of the lower Metazoa (Parazoa, Radiata Acoelomata, Pseudocoelomata, and lower Protostomia).
Offered alternate years.

613. Advanced Invertebrate Zoology 2. (3:2:3) Prerequisite: Zool. 612 or consent of instructor.
Comprehensive biology of the higher Protostomia and Deuterostomia, excluding the terrestrial arthropods. Offered alternate years.

620. Theoretical Zoology. (2:2:0) Prerequisite: consent of instructor.

☐ **Microbiology 632. Cell and Tissue Culture Techniques.** (2:0:6)

633R. Advanced Topics in Entomology. (1-2:Arr.:Arr. ea.) Prerequisite: consent of instructor.

☐ **Microbiology 641. Radioactive Tracer Techniques in Biology.** (3:1:6)

657R. Advanced Topics in Animal Ecology. (2:2:0 ea.) Prerequisite: Zool. 350.
Topics vary.

☐ **Microbiology 661. Microbial Genetics.** (4:3:3)

662. Advanced Physiology 1. (2:1:2) Prerequisite: Zool. 460 or consent of instructor.

663. Advanced Physiology 2. (2:1:3) Prerequisite: Zool. 460 or consent of instructor.

☐ **Botany 678. Organic Evolution.** (3:3:0)

☐ **Geology 685. Paleoecology.** (4:3:2)

696R. Graduate Seminar. (½:1:0 ea.)

699R. Master's Thesis. (Arr.)

799R. Doctoral Dissertation. (Arr.)

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Buelah Ream Allen Professor Emeritus of Nursing (1961) Diploma, Illinois Training School for Nurses, Cook County Hospital, Chicago, Illinois, 1922; B.A., University of Utah, 1928; M.D., University of California, 1932.

Mark K. Allen Professor Emeritus of Psychology (1946) B.A., Brigham Young University, 1926; M.A., Ph.D., Stanford University, 1935, 1955.

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J. Roman Andrus Professor Emeritus of Art and Education (1942) B.S., M.S., Brigham Young University, 1942, 1943; Ed.D., University of Colorado, 1958; Art Students League, Los Angeles Art Institute.

Clarence D. Ashton Associate Professor Emeritus of Horticulture (1951) B.S., Brigham Young University, 1929.

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Russell R. Rich Professor Emeritus of Church History and Doctrine (1953) B.S., Utah State University, 1936; M.A., Brigham Young University, 1949; Ed.D., University of Wyoming, 1955

J. Morris Richards Associate Professor Emeritus of Communications (1965) B.A., Arizona State College, 1929; M.A., University of Arizona, 1937.

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Orea B. Tanner Associate Professor Emeritus of English (1938) B.A., Brigham Young University, 1932; M.A., Columbia University, 1953.

Vasco M. Tanner Professor Emeritus of Zoology (1925) B.A., Brigham Young University, 1915; M.A., University of Utah, 1920; Ph.D., Stanford University, 1925.

Wilmer W. Tanner Professor Emeritus of Zoology (1949) B.A., M.A., Brigham Young University, 1936, 1937; Ph.D., University of Kansas, 1949.

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Josephine C. Taylor Instructor Emeritus in Library Science (1960) B.A., Brigham Young University, 1959; M.A., University of Southern California, 1960.

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LaVell G. W. Turner Instructor Emeritus of Food Science and Nutrition (1963) B.S., Brigham Young University, 1954; M.S., University of Wisconsin, 1959.

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